

PATENTS FOR INVENTIONS.

ABRIDGMENTS OF SPECIFICATIONS.

CLASS 22,
CEMENTS AND LIKE COMPOSITIONS.

PERIOD—A.D. 1905-8.



LONDON:
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
By DARLING & SON, LTD., 34-40, BACON STREET, E.
PUBLISHED AT THE PATENT OFFICE, 25, SOUTHAMPTON BUILDINGS,
CHANCERY LANE, LONDON, W.C.

1911.

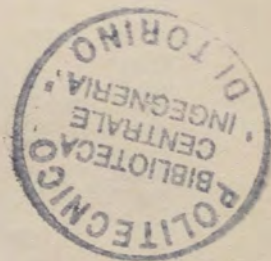
PRICE ONE SHILLING.

PATENTS FOR INVENTIONS.

ABRIDGMENTS OF SPECIFICATIONS.

CLASS 22,
CEMENTS AND LIKE COMPOSITIONS.

PERIOD—A.D. 1905-8.



LONDON:
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE.
By DARLING & SON, LTD., 34-40, BACON STREET, E.
PUBLISHED AT THE PATENT OFFICE, 25, SOUTHAMPTON BUILDINGS,
CHANCERY LANE, LONDON, W.C.

1911.





EXPLANATORY NOTE.

The contents of this Abridgment Class may be seen from its Subject-matter Index. This Index is in accordance with the *Abridgment-Class and Index Key* (REVISED EDITION, 1910), but owing to certain variations that have been made in the scope of the Abridgment Classes since the earlier sheets were printed, some additional Index headings and subheadings (indicated by an asterisk) have been employed. The *Italic* openings prefixed to the abridgments follow the same plan as in previous periods, and do not in all cases agree with the indexing. For further information as to the classification of the subject-matter of inventions, reference should be made to the above-mentioned *Abridgment-Class and Index Key* price 1s., by post 1s. 6d.), published at the Patent Office, 25, Southampton Buildings, Chancery Lane, W.C.

It should be borne in mind that the abridgments are merely intended to serve as guides to the Specifications, which must themselves be consulted for the details of any particular invention. Printed Specifications, price 8d., may be purchased at the Patent Office, or ordered by post, no additional charge being made for postage.

SUBJECT-MATTER INDEX.

Abridgments are printed in the chronological order of the Specifications to which they refer, and this index quotes only the year and number of each Specification.

Asphalts, [*not including* Asphalt plastic compositions]. '05. 11,191. '06. 17,569. '07. 19,629. 21,489.

cauldrons, tanks, heaters, and the like. *See* Cauldrons &c.

mixing. *See* *Abridgment Class* Mixing &c.

moulding. *See* *Abridgment Class* Moulding &c.
plastic compositions. *See* Bituminous &c. compositions.

Asphalts, Artificial. *See* Bituminous &c. compositions.

Basic materials for furnace linings and the like.
See Refractory substances &c.

Bitumen and bituminous compounds. *See* Asphalts;
Bituminous &c. compositions; Pitch and tar,
[*Abridgment Class* Gas manufacture].

Bitumen, Extracting and oxidizing. *See* Asphalts.

Bituminous, resinous, fatty, oily, and wax-like plastic compositions. '05.

3070 [*Appx.*]. 3992 [*Appx.*]. 4131 [*Appx.*].

4295 [*Appx.*]. 6936 [*Appx.*]. 7498 [*Appx.*].

7816 [*Appx.*]. 9249. 9350. 9422. 10,902.

13,180 [*Appx.*]. 13,735 [*Appx.*]. 13,797. 14,709.

15,770 [*Appx.*]. 15,818 [*Appx.*]. 16,182 [*Appx.*].

16,744 [*Appx.*]. 16,841. 17,534. 18,524. 18,683

[*Appx.*]. 19,108. 19,381 [*Appx.*]. 19,616 [*Appx.*].

19,622. 19,686. 21,043. 26,539. '06. 184. 1611.

2156 [*Appx.*]. 3344 [*Appx.*]. 3749. 5171 [*Appx.*].

5779. 6601. 7572. 8843 [*Appx.*]. 10,222

[*Appx.*]. 10,244. 11,145 [*Appx.*]. 11,366 [*Appx.*].

11,523. 11,686 [*Appx.*]. 12,220 [*Appx.*]. 13,355

[*Appx.*]. 13,428 [*Appx.*]. 15,314 [*Appx.*].

15,314A [*Appx.*]. 15,993. 16,368 [*Appx.*].

16,611 [*Appx.*]. 17,129 [*Appx.*]. 17,432 [*Appx.*].

17,761. 17,773 [*Appx.*]. 18,316. 18,564. 19,723

[*Appx.*]. 20,723. 21,290 [*Appx.*]. 21,576. 23,124

[*Appx.*]. 23,271. 24,529. 24,829. 24,951 [*Appx.*].

25,189. 28,199. 28,199A. 28,468. 28,492 [*Appx.*].

28,689 [*Appx.*]. 29,147 [*Appx.*]. '07. 1381.

Bituminous &c. compositions—cont.

1383 [Appx]. 3063. 4980. 6305. 6708. 7739 [Appx]. 7759 [Appx]. 7832 [Appx]. 8275. 9024 [Appx]. 9375. 9787 [Appx]. 10,064. 10,065. 10,699. 11,167 [Appx]. 11,498. 17,720. 18,101. 18,343 [Appx]. 19,629. 21,742. 22,053 [Appx]. 22,528 [Appx]. 24,948. 25,075. 25,092 [Appx]. 25,214 [Appx]. 25,614 [Appx]. 26,008. 26,852 [Appx]. 28,745. 28,759 [Appx]. '08. 537 [Appx]. 1704. 3572 [Appx]. 5279 [Appx]. 5487 [Appx]. 7887. 9477. 10,535 [Appx]. 11,062. 11,287. 11,846 [Appx]. 14,954 [Appx]. 15,100. 15,145 [Appx]. 16,885 [Appx]. 17,845 [Appx]. 18,349 [Appx]. 20,529 [Appx]. 22,111. 22,236 [Appx]. 23,765 [Appx]. 27,688 [Appx].

Calcium-sulphate cements, Plant for making. '05. 10,722. '08. 7091.***Casting substances other than metals.**

Excepting Candles, night-lights, and tapers, [Abridgment Class Oils &c]; Glass, Manufacture of, [Abridgment Class Glass]; for which see those headings.

*apparatus, [other than moulds]. '05. 2412. 4171. 6161. 7734. 7886. 9249. 19,884. 21,849. 21,940. 23,233. '06. 2859. 5659. 5947. 6087. 7400. 7852. 7883. 11,835. 12,403. 13,856. 21,373. 21,681. '07. 1372. 5075. 11,230. 19,630. 24,494. '08. 4806. 14,623. 18,031. 18,158. 20,699. 27,018. 27,733.

buildings and structures and parts thereof, casting in situ. *See Abridgment Class Buildings &c.*

casting—

*asphalts. '05. 24,088. '06. 5947.

*butter and butter substitutes. '08. 14,623.

*cements. '05. 1863. 15,164. 21,450. 22,039. 27,190. '06. 371. 7400. 8861. 10,393. 18,718. 23,375. 24,162. '07. 3290. 3344. 13,931. 17,201.

*chlorides. '08. 20,692.

*clay. '05. 14,908. 21,450. '06. 7883. 17,424.

*cocoa butter. '08. 2549.

*coffee extracts. '07. 27,213.

*concretes. '05. 15,164. 21,450. 22,039. '06. 2191A. 5659. 7883. 8861. 11,835. 17,424. 18,718. 23,375. '07. 3344. 6954. 12,565. 17,201.

*confectionery. '05. 2412. 4171. 7734. 21,849. 21,891. 21,940. '06. 6087. 6275. 12,403. 13,856. 21,373. '07. 1372.

*fats and fatty acids. '07. 19,631. '08. 18,031.

*fuel and firelighters. '08. 16,247.

*jellies and creams, table and like. '08. 14,623.

*menthol. '05. 22,523.

*paraffin and similar wax-like bodies. '07. 19,630.

*phonograph-record compositions. '07. 5075. 11,230. '08. 20,699.

*pottery materials. '05. 14,908. '08. 4806. 18,158.

*silicates. '06. 18,835.

*slags. '05. 9249. 19,884. '06. 18,835.

***Casting substances other than metals**
*cont.***casting—cont.**

*soaps. '05. 3602. 6161. '06. 21,681. '07. 6726.

18,253. 24,494. '08. 14,623. 18,031. 21,822.

*stone, artificial and imitation. '08. 1339.

*sugar. '06. 2859.

*waxes. '07. 5075. 19,630. '08. 14,623.

compositions for casting. *See Abridgment Class India-rubber &c.*

jelly moulds. *See Abridgment Class Hollow-ware.*

*moulds. '05. 1863. 2412. 2494. 3602. 6161. 7734. 7886. 9249. 12,786. 15,164. 19,884. 21,450. 21,849. 21,891. 22,039. 24,088. 27,190. '06. 371. 2191A. 5659. 6275. 7883. 8861. 10,393. 14,028. 17,424. 18,718. 18,835. 21,373. 21,681. 21,778. 23,375. 24,162. 28,468. '07. 3344. 5075. 6726. 6954. 11,230. 12,565. 13,931. 17,201. 18,253. 19,630. 24,494. 26,989. 27,213. 28,656. '08. 1339. 2549. 4806. 14,623. 16,247. 18,031. 20,263. 20,692. 21,822.

***Cauldrons and other heaters and tanks, Asphalt and like,** [including Plant for making tar macadam].

'05. 5469. 12,597. 17,534. 19,686. 20,953. '06. 2451. 7572. 13,551. 22,434. 26,818. '07. 242. 4100. 12,779. 14,794. 16,812. 18,376. 23,168. 26,835. '08. 601. 11,557. 11,747. 11,953. 13,232. 20,289. 22,595. 23,280. 24,756.

Cement pipes and tubes. *See Abridgment Class Pipes &c.*

Cements for general building purposes. *See Bituminous, resinous, fatty, oily, and wax-like plastic compositions; Cements, Portland and Roman; Plaster, lime, and chalk plastic compositions; Plastic compositions, [Abridgment Class India-rubber &c].*

Cements, Hand tools for applying. *See Abridgment Class Hand tools &c.*

Cements, Portland and Roman.

calcium sulphate, manufacture of. *See Abridgment Class Acids, alkalies, &c.*

casting. *See Casting substances &c.*

conveyers and elevators for. *See Abridgment Class Lifting &c.*

drying. *See Abridgment Class Drying.*

filtering. *See Abridgment Class Filtering &c.*

furnaces and kilns for. *See Abridgment Class Furnaces &c.*

grinding, crushing, pulverizing, and the like. *See Abridgment Class Grinding, crushing, &c.*

making by treating slag. '05. 3619. 4194. 5528. 8285. 13,886. 15,375. '06. 7443. 22,425. '07. 1646. 1647. 3294. 4530. 7742. 10,257. 10,366. 15,764. 15,765. '08. 18,680. 19,070. 23,988.

making otherwise than by treating slag. '05. 4194. 5599. 5765. 19,180. 20,865. '06. 10,091. 22,425. 23,450. 25,857. 27,059. '07. 10,366. 15,434. 25,969. '08. 467. 1339. 2528. 10,807. 15,625. 18,738.

Cements, Portland &c.—cont.

materials and compositions. '05. 4194. '06. 12,353. '07. 25,969. '08. 467. 1339. 14,336. 18,199. 18,345.

mixing. *See Abridgment Class Mixing &c.*

moulding. *See Abridgment Class Moulding &c.*

pug-mills. *See Abridgment Class Mixing &c.*

separating or sorting. *See Abridgment Class Sifting &c.*

sifting or screening. *See Abridgment Class Sifting &c.*

testing physical qualities. *See Abridgment Class Registering &c.*

treating after manufacture. '06. 14,233. 23,450. '07. 3404. 25,795. '08. 1339. 7091. 15,797.

17,119. 24,718. 25,833.

weighing. *See Abridgment Class Weighing-apparatus.*

Concretes and mortars, Lime, magnesia, and cement.

casting. *See Abridgment Class Moulding &c.*

compositions. '05. 4194. 7521. 8398. 9221.

13,868. 19,297. 19,502. 20,070. 22,787. 24,219.

24,224. 25,715 [*Appx.*]. '06. 3717. 9785.

10,208 [*Appx.*]. 12,621. 13,232. 15,539.

16,460 [*Appx.*]. 16,714. 18,718. 21,011.

21,011A. 21,502. 22,390. 25,043. 27,619. '07.

2605. 3530. 3913 [*Appx.*]. 3916. 6070. 10,030.

11,956. 13,811. 15,667 [*Appx.*]. 17,907 [*Appx.*].

18,215. '08. 467. 860. 1339. 4102. 6230.

7827. 7887. 11,062. 11,070 [*Appx.*]. 13,941.

14,342. 15,246 [*Appx.*]. 15,797. 18,743.

25,833. 26,416. 26,455. 27,902.

bituminous, resinous, fatty, oily, and wax-like compositions. *See Bituminous &c. compositions.*

fibrous materials, compositions consisting largely of. *See Abridgment Class India-rubber &c.*

conveyers and elevators for. *See Abridgment Class Lifting &c.*

mixing. *See Abridgment Class Mixing &c.*

moulding. *See Abridgment Class Moulding &c.*

tar concretes. *See Abridgment Class India-rubber &c.*

Coverings and compositions, Non conductors of sound. *See Sound-deadening coverings &c.*

Fire-clay compositions, Refractory. *See Refractory substances &c.*

Fire-proof coverings and compositions.

Excepting Paints &c., [*Abridgment Class Paints &c.*]; Paper, [*Abridgment Class Paper &c.*]; Refractory substances &c.;

for which see those headings.

*blocks, plates, or sheeting. '05. 577. 14,117. 14,288. 23,307. '06. 11,351. 14,001. 15,175.

16,869. 27,073. '07. 6475. 20,378. '08. 27,902.

*materials and compositions—

*impregnating liquids. '06. 5169. 14,205.

14,205A. 27,073. '07. 6475. 7150. 9300. '08.

7430. 12,980. 13,792. 23,990. 27,225. 28,056.

Fire-proof coverings &c.—cont.

*materials and compositions—cont.

*other than impregnating-liquids. '05. 577.

2441. 2455. 4194. 9439. 12,105. 14,117.

14,288. 20,640. 23,307. 24,925. '06. 8627.

11,086. 11,351. 14,001. 15,175. 16,869.

17,006. 22,317. 22,390. 27,875. '07. 430.

2442. 2460. 3916. 6755. 9397. 20,378.

24,052. 25,605. '08. 10,771. 12,570. 12,597.

23,433. 27,902.

moulding. *See Abridgment Class Moulding &c.*

*securing or applying. '05. 14,117.

starching preparations. *See Sizes &c.*, [*Abridgment Class Starch &c.*]; Starching clothes &c., [*Abridgment Class Washing &c.*].

Fire-resisting or refractory substances. *See Refractory substances &c.*

Granite, Artificial and imitation. *See Stone, Artificial &c.*

Hardening stone, cements, and plasters. *See Stone, Natural &c.*, Hardening &c.

Heat-resisting compositions. *See Fire-proof coverings &c.*

Hydraulic cements. *See Cements, Portland &c.*

Magnesium cements. *See Concretes &c.*; Plastic compositions, [*Abridgment Class India-rubber &c.*].

Marble. *See Stone &c.*

Masonry, Preserving. *See Stone, Natural &c.*, Hardening &c.

Melting-cauldrons. *See Asphalts.*

Mortars and plasters. *See Concretes &c.*; Plaster &c. compositions.

Plaster, lime, and chalk plastic compositions.

acids and salts, containing, (e.g. Keene's and Parian cements). '05. 1457. 2343. 2467. 5763.

9221. 20,882 [*Appx.*]. '06. 892 [*Appx.*]. 3162

[*Appx.*]. 6034. 12,447 [*Appx.*]. 14,992. 15,553.

17,006. 17,988 [*Appx.*]. 20,298. 23,851

[*Appx.*]. '07. 17,562. '08. 11,522. 18,345.

albuminous or glutinous matter, containing. '05.

95 [*Appx.*]. 20,882 [*Appx.*]. '06. 3162 [*Appx.*].

6034. 11,351. 15,553. 17,006. 19,388 [*Appx.*].

20,298. '07. 41. 430. 7832 [*Appx.*]. 16,567

[*Appx.*]. 22,961 [*Appx.*]. 24,586 [*Appx.*]. '08.

11,522.

bituminous, resinous, fatty, oily, and wax-like compositions. *See Bituminous &c. compositions.*

concretes. *See Concretes &c.*

Plaster &c. compositions—cont.

- fibres, containing. '05. 95 [Appx]. 2467. 20,640. '06. 173 [Appx]. 3162 [Appx]. 3333 [Appx]. 12,447 [Appx]. 16,869. 19,388 [Appx]. '08. 20,868 [Appx].
 fibrous materials, compositions consisting largely of. *See Abridgment Class India-rubber &c.*
 lime, slaking. *See Abridgment Class Acids, alkalies, &c.*
 materials not otherwise provided for, containing. '05. 2467. 4194. 10,722. '06. 4503. 14,992. 15,539. 16,869. 17,006. 23,851 [Appx]. '07. 3916. 5128. 12,137. 14,452. 17,201. 19,523. '08. 1935 [Appx]. 2252 [Appx]. 10,110. 11,062. 12,597. 18,345.
 purposes of special character—
 electric insulation. '06. 892 [Appx]. 23,851 [Appx].
 fabrics, coating. '08. 1935 [Appx]. 2252 [Appx].
 refractory limestone blocks and the like. *See Refractory substances &c.*
 Plasters, Preserving. *See Stone, Natural &c., Hardening &c.*

Portland cement. *See Cements, Portland &c.*

Refractory substances for furnace linings, crucibles, and the like.

- compositions other than below. *See Abridgment Class India-rubber &c.*
 conductors for use in electric lamps. *See Abridgment Class Electric lamps &c.*
 fettling-materials for puddling. *See Abridgment Class Iron &c.*
 materials and compositions containing bauxite, boron compounds, carbon, carborundum, chrome iron ore, chromium oxide, corundum, fire-clay, ganister, iron oxide, limestone, magnesite, silica, siloxicon, titanium compounds, and old crucibles. '05. 5984 [Appx]. 6693 [Appx]. 7599. 8900. 9610. 9877. 11,696. 17,700. 17,890. 18,753. 21,347. 26,384. '06. 3353. 3353A. 5437. 8627. 9906. 10,161. 15,539. 15,734. 15,735. 16,104. 16,423. 16,714. 24,829. 27,209 [Appx]. 27,619. '07. 2994. 11,175 [Appx]. 20,378. 22,869. 28,055. '08. 69. 860. 3947. 12,258. 14,619. 21,756 [Appx]. 23,071. 24,325.
 concretes and mortars, lime, magnesia, and cement. *See Concretes &c.*
 other than materials and compositions. '07. 1197A. '08. 17,340.

Slags, Treatment of, [not including Granulating]. '05. 4194. 7521. 15,375. 18,806. 19,686. '06. 1102. 2207. 3240. 18,835. 25,417. '07. 22,283. '08. 2405. 18,743.

Excepting Drying systems &c., [Abridgment Class Drying]; Grinding, crushing, &c., [Abridgment Class Grinding, crushing, &c.]; Iron and steel manufacture, [Abridgment Class Iron &c.]; Mixing &c., [Abridgment Class Mixing &c.]; Slagwool, Preparation of; for which see those headings.

Slags, Treatment of—cont.

- clinker, destructor and like, treating. *See Abridgment Class Sewage &c.*
 furnaces and kilns. *See Abridgment Class Furnaces &c.*
 granulating by scattering, spraying, or running molten slag into water or other liquids. *See Abridgment Class Metals and alloys.*
 making cements by treating slag, [other than preliminary treatment applicable to slags generally]. *See Cements, Portland &c.*

Slagwool, Preparation of. '07. 27,172.

Slate, Artificial and imitation. *See Stone, Artificial &c.*

Slurry. *See Cements, Portland &c.*

***Sound-deadening coverings and compositions.** '05. 21,818. '06. 768. 3353. 6445. 11,086. 15,175. 16,869. '07. 3916. 6708. '08. 1247. 1451. 2871. 4847. 8017. 15,100. 16,028. 23,264.**Statuary.**

- cleaning. *See Abridgment Class Washing &c.*
 compositions for. *See Abridgment Class India-rubber &c.*
 making. *See Electrolysis, [Abridgment Class Electrolysis]; Metals, Cutting &c., [Abridgment Class Metals, Cutting &c.]; Pottery, Manufacture of, [Abridgment Class Moulding &c.]; Stone &c., Cutting and working, [Abridgment Class Stone &c.]; Wood and the like, Cutting &c., [Abridgment Class Wood &c.].*

Stone, Artificial and imitation, [including Stone-like products obtained by fusing materials at very high temperature, but not including the manufacture of figured stone].

Excepting Concretes &c.; Fabrics coated &c., [Abridgment Class Waterproof &c. fabrics]; Gems, [Abridgment Class Fastenings, Dress]; Printing and embossing surfaces, [Abridgment Class Printing other than letterpress &c.]; Slags, Treatment of;

for which see those headings.

bricks, building and paving blocks, slabs, and tiles, forms of. *See Abridgment Class Moulding &c.*

colouring. *See Stone, Colouring.*

composite and faced blocks. *See Abridgment Class Moulding &c.*

compositions, [other than compositions fused together at a high temperature]. *See Abridgment Class India-rubber &c.*

furnaces and kilns for. *See Abridgment Class Furnaces &c.*

hardening and preserving. *See Stone, Natural &c., Hardening &c.*

hearthstones for whitening and colouring hearths. *See Abridgment Class Paints &c.*

india-rubber and the like, making from. *See Abridgment Class India-rubber &c.*

Stone, Artificial &c.—cont.

inlaid work. *See Abridgment Class Buildings &c.*
lime, slaking. *See Abridgment Class Acids, alkalies, &c.*

mixing materials. *See Abridgment Class Mixing &c.*

mosaics. *See Abridgment Class Buildings &c.*

moulding and casting. *See Abridgment Class Moulding &c.*

obtaining by fusing materials at a high temperature. '06. 5671. 16,714. '07. 11,175 [*Appx.*]. 12,137. 25,655. '08. 702. 23,010.

obtaining otherwise than by fusing materials at a high temperature. '05. 9221. '06. 14,001. '07. 2605. '08. 6256. 13,941. 14,271. 17,340. 21,239. 22,743.

ornamenting during casting or moulding. *See Stone, Colouring.*

slabs, processes for making. *See Abridgment Class Moulding &c.*

stone cutting and working tools. *See Abridgment Class Stone &c.*

stucco-work, artificial. *See Abridgment Class Buildings &c.*

Stone, Colouring, [*including the manufacture of figured and ornamented stone*]. '05. 6536. 15,582. 15,753. '06. 20,901. 25,621. '07. 7037. '08. 289. 6256. 14,271. 18,681.

colours. *See Abridgment Class Paints &c.*

plastic compositions. *See Abridgment Class India-rubber &c.*

stonework, ornamental. *See Stonework, Ornamental.*

Stone, Colouring—cont.

surfaces, ornamenting by colouring otherwise than during casting or moulding. *See Abridgment Class Ornamenting.*

Stone, Natural and Artificial, Hardening and preserving, [*including Hardening and preserving bricks*]. '05. 8804. 13,085. 18,806. 20,070. 24,219. '06. 2207. 7572. 7927 [*Appx.*]. 9785. 12,621. 18,964. 19,038. 21,011. 21,011A. 22,390. 25,417. '07. 2605. 8473. 9633. '08. 1339. 4566. 12,980. 13,792. 13,941. 18,743. 22,743.

impregnating-compositions other than those which depend for their action upon chemical reaction with the material of the stone. *See Abridgment Class Waterproof &c. fabrics.*

paints and like coating-compositions. *See Abridgment Class Paints &c.*

varnishes. *See Abridgment Class Paints &c.*

Stonework, Ornamental.

mosaics. *See Abridgment Class Buildings &c.*

ornamenting artificial stone during casting or moulding. *See Stone, Colouring.*

ornamenting stone surfaces otherwise than during casting or moulding, or by working stone. *See Abridgment Class Ornamenting.*

stone, artificial and imitation, for. *See Stone, Artificial &c.*

stone, cutting and working. *See Abridgment Class Stone &c.*

Vulcanizing asphalts. *See Asphalts.*

NAME INDEX.

The names in *italics* are those of persons by whom inventions have been communicated to the applicants for Letters Patent.

Ackermann, J. Widmer- ...'08. 2549
 Adams, E. L.'07. 26,989
 Adda, L. d''07. 10,030
 Aeberli, H.'06. 1611
 Ahrberg, A.'06. 2859
 Akt.-Ges. für Bürsten Industrie
 vorm. C. H. Roegner & D.
 J. Dukas.'07. 3290
 Albion, I.'08. 24,325
 Alexander-Katz, B. ...'06. 3182
 Ali-Cohen, E. S.'08. 5279
 [Appx]. 10,535 [Appx]
 Allan, F. M.'08. 18,738
 „ J.'08. 11,557
 Ambrose, A. ...'08. 2252 [Appx]
 Ames, R. ...'08. 20,289. 23,280
 Apperley, W. J.'06. 17,569
 Armstrong, T. J.'05. 1457
 Arnold, J.'07. 8275
 Asbestos Wood Co.'07. 2460
 Ashdown, J. W.'07. 23,168
 Associated Portland Cement
 Manufacturers ...'05. 5763
 5765.
 Atherton, H.'05. 10,502
 26,539
 Atkinson, C. W.'06. 892
 [Appx]
 Austin, D.'08. 17,119

 Babits, A. J. von ...'05. 17,700
 Bach, J.'05. 7599
 „ P.'08. 27,733
 Bacon, F. R.'08. 17,340
 Baissac, C. M.'05. 22,039
 Baker, G. S.'05. 23,233
 Bale, F.'05. 10,722
 Bamber, H. K. G.'05. 5765
 '08. 2405
 „ H. Kelway-'06.
 23,450
 Baraduc, L. H.'06. 27,209
 [Appx]
 Barnett, W. T.'07. 41. '08.
 6230

Barnhurst, H. G. ...'07. 15,434
 Bartlett, G. H.'06. 18,718
 „ G. L.'06. 17,424
 Basset, L. P.'08. 22,236
 [Appx]
 Bateman, J.'07. 19,630
 Batten, G. B.'06. 5779
 Baudry, J.'05. 5528
 Baxter, W. H.'08. 22,595
 Beaver, C. J.'06. 5947. '07.
 6708
 Becker, F. H.'06. 5671
 Behmer, J. E.'06. 3749
 Belloni, E. L.'07. 7037
 Benjamin, F.'06. 1102
 Benoid, J.'06. 14,205
 14,205A
 Berg, L. A.'06. 13,856
 Berglund, S. W.'06. 9785
 Berliner, H. S.'08. 537
 [Appx]
 Berndt, A.'08. 4102
 Berner, E.'05. 14,117
 „ R.'08. 14,342
 Berry, H.'07. 11,956
 Bill, R.'05. 19,686
 Bishop, A. E.'05. 19,297
 Bishopric, G. F.'06. 15,314
 [Appx]. 15,314A [Appx]
 Bittner, H.'05. 12,786
 Blass, G.'06. 6601
 Blocks, A.'06. 10,393
 Bloxam, A. G.'05. 21,347
 26,384. '07. 7150. 18,253
 '08. 21,822.
 Boehringer & Soehne, C. F.
 '06. 15,539
 Boelling, F.'08. 21,756
 [Appx]
 Bölling, F.'05. 6693
 [Appx]
 Bonnefont, C.'08. 1339
 Bougleux, E. ...'06. 12,353. '08.
 467
 Boulton, A. J.'05. 4194. '06.
 2207. 25,417. '08. 18,743
 Bouvier, A.'05. 18,753

Bradley, G.'07. 242
 Brancart, A.'05. 7886
 Branco, H.'08. 8017
 Brandram, A. G.'06. 184
 Brashler-Kurtz, E.'05.
 11,191
 Brearley, H.'08. 14,619
 Bristowe, F. E.'07. 18,376
 British Thomson-Houston Co.
 '05. 15,770 [Appx]. '06.
 10,208 [Appx]. '07. 1197A
 22,869. '08. 23,071.
 Brodie, J. A.'05. 7521. '07.
 14,794
 Brook, F. H.'08. 7887
 Brooke, A. ...'07. 9024 [Appx]
 Brookes, A. G.'07. 2460
 „ H. J.'05. 2494
 „ J.'05. 2494
 Brookes', Ltd.'07. 9024
 [Appx]
 Brooks, A.'05. 5763
 „ E. W.'06. 25,857
 Brown, G. B.'05. 2467
 Brown Hoisting Machinery Co.
 '06. 24,162
 Brown, J.'06. 3717
 Bruhn, B.'05. 8285
 Burkholder, P. T. ...'07. 12,565
 Butchard, G. W.'07. 13,811
 Butterfield, J. C.'05. 9350
 19,502
 Buttermere Green Slate Co.
 '05. 15,753
 Byrne, W. H.'05. 4295
 [Appx]
 Byvoet, W.'06. 10,393

 Callow, Wright, & Hewlett... '06.
 12,220 [Appx]
 Candy, F. P.'08. 24,756
 Carlson, G.'05. 21,849. '06.
 12,403
 Carr, W. R.'05. 11,696
 Carruthers, E. V. ...'05. 25,715
 [Appx]

Carter, H.....'07. 7759 [Appx]
 Caspar, C.....'08. 69
 Castle, P. C. D.....'05. 6936
 [Appx]. '06. 28,492 [Appx]
 Cates, H. F.'07. 7739
 [Appx]
 Cawley, J.'08. 12,597
 Charles, A.....'07. 2605
 Charleston, D.....'05. 19,381
 [Appx]
 Chiodo, A. Z.'06. 21,011
 21,011A
 Clare, J.'08. 11,287
 Claremont, E. A.'06. 5947
 '07. 6708
 Clark, A.'06. 27,875
 Clarke, J. G.'07. 23,168
 " J. W.'06. 21,373
 Cohen, E. S. Ali-'08. 5279
 [Appx]. 10,535 [Appx]
 Coleman, J. M.'05. 23,307
 Coles, S. O. Cowper-'06.
 22,425. '07. 4530. 7742
 10,257. 10,366.
 Colin, J. G. H.....'07. 17,907
 [Appx]
 Collins, H. A. D.....'06. 15,734
 15,735. 27,619
 Collos Portland Cement Co.
 '07. 1646. 1647. 15,764
 15,765. 25,795.
 Colloseus, H....'05. 3619. 13,886
 Colloseus, H.....'07. 1646. 1647
 15,764. 15,765. 25,795
 Cöln - Müsener Bergwerks-Akt.-
 Verein ...'06. 2207. 25,417
 '08. 18,743.
 Colonia Apparatebau Ges. ...'07.
 5075
 Connolly, J....'06. 3344 [Appx]
 Cooper, G.'08. 21,756
 [Appx]
 Copland, A. W.'05. 21,940
 Cote, E. F.'07. 22,283
 Covington, E.....'07. 25,614
 [Appx]
 Coward, W. H.'07. 10,064
 10,065
 Cowper-Coles, S. O.'06. 22,425
 '07. 4530. 7742. 10,257
 10,366.
 Cox, G. E.'05. 5984
 [Appx]
 Cramer, E.'05. 2343
 " P. A. M. ...'08. 10,535
 [Appx]
 Crefelder Seifenfabrik Stock-
 hausen & Traiser.....'07.
 24,494.
 Cross, T.....'06. 3333 [Appx]
 '07. 13,931
 Crowley, R. J.'06. 8627
 Czarnikow, C.....'06. 14,001

 David, J. ...'07. 22,528 [Appx]
 Davies, R.....'05. 24,925

Day, E. T.'08. 21,239
 Deidesheimer, A.....'06. 16,104
 Diamond, B.'08. 23,990
 Dolmetsch, H.....'06. 15,175
 Dukas, Akt.-Ges. für Bürsten
 Industrie vorm. C. H.
 Roegner & D. J.....'07.
 3290.
 Dunbar, G. B.'05. 4295
 [Appx]
 Dunz, W.'07. 430

 Eberhard, R.'08. 12,980
 13,792
 Edison, T. A.'07. 28,759
 [Appx]
 Edmunds, E. W.....'06. 11,523
 Eifler, C.'05. 15,582
 Eissrich, O.'05. 577
 Eldred, B. E.'06. 10,091
 Engelhorn, F.....'06. 15,539
 16,714. '07. 11,175 [Appx]
 Equatorial Trading & Manu-
 facturing Co. ...'08. 17,845
 [Appx].
 Espinasse, P.'07. 17,720

 Fabre, L.....'07. 17,720
 Fairweather, W.....'06. 24,162
 Farthing, I.....'08. 1704
 Fawcett, J. D.'05. 5599
 Fawcett, Ltd., T. C....'05. 5599
 Fenton, F.'06. 16,368
 [Appx]
 Ferguson, J.....'06. 14,028
 Firsoline Manufacturing Co.
 '05. 18,683 [Appx]
 Firth, E.'07. 17,201
 Fischer, J.....'05. 95 [Appx]
 FitzPayne, F.....'06. 8627
 Flatau, T. S.'06. 13,428
 [Appx]
 Flynt, H. S.'07. 9375
 Forbes, A. A.....'06. 5659
 Forth & Clyde & Sunnyside
 Iron Companies... '06. 3717
 Frankl, E.....'08. 14,342
 Fraser, J. J.....'08. 23,433
 Freakley, W.'05. 19,686
 Frings, H.'05. 4171
 Frollo, G.....'06. 23,124
 [Appx]
 Fuller, J. W.'07. 15,434
 Furse, A. D.....'08. 23,765
 [Appx]

 Gardeur, A.....'05. 24,219
 Gaven, W. J.'07. 25,214
 [Appx]
 Geipel, W.'08. 10,535
 [Appx]

General Electric Co... '05. 15,770
 [Appx]. '06. 10,208 [Appx]
 '07. 1197A. 22,869. '08.
 23,071.
 Geraedts, C.....'06. 10,393
 Gessner, E.'08. 20,692
 Gibbs, W....'05. 13,735 [Appx]
 Gilbert, W.'08. 18,031
 Gill, J. E.....'08. 20,263
 Giller, T.....'07. 18,215
 Goldschmidt, H.....'05. 9610
 Gonnermann, H.....'06. 22,317
 Goodall, A. A.....'06. 11,523
 Gordon, A.....'06. 7927
 [Appx]
 Gramiccia, C.'06. 22,390
 Granich, J.'05. 24,088
 Gray, R. K.....'05. 21,818
 Grimm, C.'06. 14,233
 Grosse, R.....'07. 25,605
 Gumpert, G.'08. 8017

 Habay, P.....'05. 15,164
 Hales, A.....'07. 6070
 Hamlett, F.....'08. 11,070
 [Appx]
 Hansen, P.'05. 13,085
 Harris, S. M.'08. 27,225
 Harroway, G. M.....'08. 11,846
 [Appx]
 Hart, W. B.'06. 6445
 Hartenstein, H. L....'06. 10,161
 Hartmann, M.....'07. 24,586
 [Appx]
 Heintzel, K.'05. 2343
 Hennequin, D.'08. 5487
 [Appx]
 Hennings, J.'06. 25,043
 Herrenschmidt, H....'07. 20,378
 Heuer, A.....'07. 7832 [Appx]
 Hewlett, Callow, Wright, &
 '06. 12,220 [Appx]
 Hippe, E. E.'06. 21,576
 Hitchins, J. R.....'07. 430
 Hobbis, F.'06. 16,460
 [Appx]
 Hocke, C.....'06. 27,059
 Hof, A.....'08. 14,954 [Appx]
 Hoffmann, L.'08. 27,018
 Hoffmeister, W.....'05. 15,582
 Horn, A.....'06. 6275
 Hornell, J.'06. 20,901
 Houston Co., British Thomson-
 '05. 15,770 [Appx]. '06.
 10,208 [Appx]. '07. 1197A
 22,869. '08. 23,071.
 Hövermann, B.'08. 15,797
 Howard, S.'06. 21,502
 Howarth, C.'05. 7816
 [Appx]
 " H.'05. 7816
 [Appx]
 Hoyt, W. H.....'07. 18,343
 [Appx]
 Hoz & Kempter.....'07. 26,835

Hughes, A. M.....'06. 18,564
 " C. M. C.'06. 7852
 Hugot, A.....'08. 12,258
 Hullinghorst, F. J. D.....'06.
 17,569
 Hundt, H.....'05. 15,582
 Hunter, J. R....'05. 2441. 2455
 Hutchinson, C. T.....'06. 7400
 " J.'05. 21,043
 " '07. 6305
 Hutton, E. F.....'08. 2871
 16,028
 Imray, O.....'07. 6726
 Ingham, W. P.....'07. 27,172
 Inrig, A. G.....'06. 17,129
 [Appx]
 Internationales Patent - und
 Maschinenges. R. Lüders.
 '06. 3182.
 International Pavement Co... '06.
 20,723
 Irvine, G. M. L. Moore.....'08.
 14,623
 Isolatoren - Fabrik " Pulvolut"
 Ges.'06. 28,199. 28,199A
 Jack, C.....'08. 22,743
 Jacob, F. D.....'05. 14,288
 Jacobi, A.....'07. 6726. 18,253
 '08. 21,822
 Jacobi, H.....'08. 14,271
 Jacoutot, E. J.....'05. 2412
 Jacquet, J '07. 4980
 James, R. W.....'05. 3602
 Janitschek, J.....'06. 12,447
 [Appx]
 Jenkins, A. R.....'05. 17,534
 Jensen, E.....'05. 7498 [Appx]
 Johnson, A.....'05. 14,908
 " H. W '08. 20,529
 [Appx]
 " J.....'06. 21,290
 [Appx]. 23,271
 " J. Y.'06. 4503
 Johnston, R.'06. 15,993
 Jones, W.....'06. 11,523
 Jorgensen, H.....'06. 3162
 [Appx]
 Jupillat, C.'07. 19,523
 Jurschina, F.'06. 16,104
 Justice, P. M.....'06. 20,723
 Karyscheff, A. A. de... '07. 2994
 Kathe, J.....'08. 15,100
 Katz, B. Alexander... '06. 3182
 Kaufmann, J.'05. 16,744
 [Appx]
 Kayser, H.'08. 24,718
 Kellett, S.'05. 15,753
 Kelly, T. D.....'05. 8398. '06.
 17,761. '08. 14,336

Kelway-Bamber, H... '06. 23,450
 Kempter, Hoz &'07. 26,835
 Ketelsen, N.....'06. 7883
 Kilburn, B. E. D.'06. 11,835
 28,199. 28,199A
 Klauser, O '07. 5075
 Klinge, A.....'05. 24,224
 Klinger, G.....'06. 21,681
 Klobukowski, W. P....'05. 8900
 '06. 5437
 Knorpp, P.....'05. 7734
 Koch Bros... '07. 24,586 [Appx]
 Kochmann, C.....'05. 16,744
 [Appx]
 Koepf & Co., R.....'06. 4503
 Krümpelmann, J.'06. 25,189
 Kurtz, E. Braschler.....'05.
 11,191
 Labour, V.'06. 16,423
 Laeuffer, J.....'07. 2442
 Lake, C. S.....'07. 5128
 " H. H... '05. 20,882 [Appx]
 '07. 5128
 " S.....'06. 29,147 [Appx]
 " W. E.....'07. 21,489. '08.
 7091. 10,110. 16,885 [Appx]
 18,345.
 Latham, E.'07. 14,452
 Laureau, J. H.'06. 5169
 Layton, G. R. M.....'05. 5765
 Lefranc, L.....'07. 12,137
 Leishman, T. L.....'07. 22,053
 [Appx]
 Le Maitre, R. A.....'05. 15,818
 [Appx]
 Lessing, W.....'08. 18,680
 19,070
 Levene, S.....'08. 27,225
 Liebold, R.'06. 14,233
 Lines, A. A.'08. 3947
 " E.....'06. 7572
 " Loke, J. J.'08. 23,010
 Lüders, Internationales Patent-
 und Maschinenges. R....'06.
 3182.
 Lupton, H.'06. 11,523
 " W.....'06. 11,523
 McKerrow, C. A.'06. 6445
 Malby, G. W.....'07. 16,567
 [Appx]
 Mallandain, W. S.....'06. 6445
 Mandies, E.....'05. 17,700
 Mansan, R. d'Olivier.....'07.
 25,075
 Marino, P.....'08. 7430
 Marks, E. C. R.'07. 25,092
 [Appx]. '08. 23,264
 " G. C.'05. 3070
 [Appx]
 Marriott, T.'07. 3063
 10,699. 11,498

Marshall, J. G.'05. 5984
 [Appx]
 Martyn, A.'08. 20,263
 Mason, J.....'05. 13,868
 Mathis, E.'05. 19,108
 Mayhew, A.....'08. 10,771
 Mecke, P.....'08. 25,833
 Medvecsky, S. von... '08. 27,902
 Meersch, A. E. M. van der.
 '05. 22,039
 Mélin, A. E.....'05. 18,524
 Mendelsohn, M.'08. 14,342
 Mérou, E.....'07. 1383. [Appx]
 Metcalf, J. W.'07. 4100
 Metz, A.....'05. 13,797. '06.
 10,222 [Appx]. 24,829
 Meyenberg, J.....'05. 12,105
 Michotte, E.'05. 7886
 Middleton, R.....'06. 7852
 Milburn, A.....'05. 18,683
 [Appx]
 Miller, E.....'07. 1381
 Mitchell, A. J.....'06. 18,316
 '08. 9477
 " E. E.....'06. 18,316
 '08. 9477
 " G. A.'06. 18,316
 '08. 9477
 Mitchison, G. C.'06. 371
 Monin, A.....'08. 1935 [Appx]
 Moore-Irvine, G. M. L.....'08.
 14,623
 Moore, W. S.....'08. 12,597
 Moorwood, F. C.....'08. 14,619
 Müller, A.'07. 3294
 " K.'07. 17,562
 " L. E.'06. 27,209
 [Appx]
 " R.'07. 24,052
 Murphy, T.....'06. 16,611
 [Appx]. 24,529
 Muskett, E. A.'08. 17,845
 [Appx]
 Neal, A. W.....'06. 6034
 Netzkär, G.....'05. 95 [Appx]
 New Jersey Patent Co.....'05.
 3070 [Appx]. '07. 25,092
 [Appx].
 Newberry, S. B.....'07. 3404
 Oberlies, W.'07. 3344
 Olivier-Mansan, R. d'.....'07.
 25,075
 Parker, W. R.....'08. 24,325
 Paschetta, P. A.....'07. 24,948
 Paterson, S.....'07. 21,742
 Pauly, A. A.'08. 4566
 Payne, E. G.'06. 13,232
 20,298
 " G.....'06. 13,232
 20,298. '08. 289
 " S.....'08. 11,062

Peard, O. L.'06. 5171
[Appx]
Pedersen, C.'05. 4171
Peters, H.'05. 19,180
Petty, F.'06. 16,869
W.'06. 16,869
Phillips, W. A.'08. 17,340
Pieper, A.'08. 14,954 [Appx]
Piérion, P. R.'07. 22,283
Plagnes, E.'08. 5487 [Appx]
Plant, D. T.'08. 13,232
Plisson, G.'06. 11,366 [Appx]
Plönnis, R.'07. 6755
Polglase, C. J.'08. 18,199
Polysius, G.'08. 10,807
Pont, S. de.'07. 9397
Popplewell, G.'07. 3913
[Appx]
Porisch, M.'05. 12,786
Potter, C. J.'07. 25,969
Pradel, G. J. L.'07. 5128
Préaubert, L.'05. 9422
Prelle, J. H.'08. 20,868 [Appx]
Price, E. F.'05. 5984 [Appx]
Purcell, M. F.'08. 18,199
Pybus, E. M.'08. 15,145
[Appx]
„ R. H.'08. 15,145
[Appx]

Queneau, A. L. J.'05. 9877
Quinlan, T. H.'06. 7852

Radlowski, K. von.'08. 2528
Ralph, S. J.'08. 18,031
Reiche, M.'05. 4194
Reif, N.'06. 22,317. '08.
18,349 [Appx]
"Reliefmalerei" Ges.'05.
20,882 [Appx]
Remy, Soc. Anon. des Usines.
'07. 7150
Rendle, J.'06. 12,220
[Appx]
Rensch, P.'06. 11,145 [Appx]
Reynaud, G.'08. 3572 [Appx]
27,688 [Appx]
Rhodin, J. G. A.'08. 23,988
Richards, W.'05. 16,841
Richardson, F. W.'05. 15,753
Richmond, J.'08. 11,557
Ridley, T. W.'05. 9249. 19,884
Riebe, C.'07. 1372
Riesch, A.'08. 18,681
Rinderknecht, C.'06. 173
[Appx]
Rinne, A.'06. 18,964. 19,038
Rivoir, W.'05. 6161
Roegner & D. J. Dukas, Akt.-
Ges. für Bürsten Industrie
vorm. C. H.'07. 3290
Rogers, A. B. C.'08. 12,570
Röhl, W.'05. 3992 [Appx]

Romney, H. R.'05. 9439
Rosner, H.'05. 1863
Ross, A.'05. 6536
Roth, R.'05. 3602
Rouxville, E. A. L.'06. 17,773
[Appx]
Rózsa, M.'05. 12,597
Rummel, H. F.'08. 20,699
Rutgerswerke Akt.-Ges.'07.
21,489
Ruzicka, F.'06. 23,851 [Appx]
Ryan, J. H.'08. 18,199
Ryance, J.'08. 28,056

Sackett Plaster Board Co.'08.
7091
Salvisberg, O.'08. 601
Sani, B.'07. 3530
Sankey, C. H.'08. 3353. 3353A
Savy, A. H.'06. 6087
Sawyer, F. M.'05. 27,190
Scammell, J. B.'08. 17,845
[Appx]
Schaar, A.'08. 23,264
Schäfer, C.'06. 11,351
Schatz, S.'07. 26,835
Schauli, G.'05. 19,616 [Appx]
Schellhorn, F.'06. 13,428
[Appx]
Schliessler, J.'08. 1451
Schimansky, H.'06. 8843
[Appx]
Schmitz, J. S.'07. 22,961
[Appx]
Schougaard, S.'06. 15,553
Schourup, C.'05. 24,224
Schreiber, O.'07. 7739 [Appx]
Schruf, G.'07. 28,745
Schudt, H.'06. 28,468. '08.
22,111
Schumacher Aktieselskabet, H.
'05. 7498 [Appx]
Schumacher, W.'05. 18,806
'06. 12,621
Schwanenberg, E.'06. 18,964
19,038
Selater, W.'05. 23,307
Seaboldt, B.'05. 17,890
Seemen, E. von'07. 25,655
'08. 702
Sendele, A.'08. 15,246 [Appx]
Sharp, W. D.'08. 16,247
Sheppard, F.'05. 8398
Shitkewitsch, N.'08. 7827
Shott, W. N.'06. 10,244
Siemens & Co., Geb.'05. 21,347
26,384
Skanska Cementgjuteriet Co.
'06. 11,835
Skorzewski, W. von'08. 1247
Sleicher, W.'06. 24,951
[Appx]
Smart, F. W.'08. 11,747
„ J.'05. 20,953

Smith, A. A.'07. 11,167
[Appx]
„ R.'05. 10,902. 26,539
Snyder, W. E.'08. 15,625
Soc. Anon. des Combustibles
Industriels'05. 16,182
[Appx]. '06. 28,689 [Appx]
Soc. Anon. des Usines Remy.
'07. 7150
Soc. Anon. Le Chryso-Cérame.
'06. 17,988 [Appx]
Soc. Générale de Goudronnage
des Rontes.'06. 2451
Solomon, S. L.'08. 17,119
South, J. T.'06. 13,232
20,298
Spackman Engineering Co., H. S.
'08. 10,110. 18,345
Spittler, W.'06. 11,086
Standard Varnish Works.'08.
16,885 [Appx]
Stapley, A.'07. 18,376
Stevenson, A. W.'05. 23,307
Stidder, J. G.'05. 21,450
Stine, M.'07. 19,629
Stockhausen & Traiser, Cre-
felder Seifenfabrik.'07
24,494.
Stockhausen, J.'07. 24,494
Stoddart, F. W.'06. 3240
Stöffler, E.'07. 8473
Stowell, E. R.'06. 9906
Stratton, J.'06. 5947
Stubbs, J.'08. 4806
„ W.'08. 18,158
Suhr, R. F. H.'07. 26,852
[Appx]
Sundell, F. R. A.'08. 6256
Suski, S.'06. 13,355 [Appx]
Symon, G.'07. 16,812

Tanner, A. E.'06. 5947
Tas, H.'07. 22,528 [Appx]
Thiemann, H.'05. 13,180
[Appx]
Thom, T. M.'05. 8804. 9221
20,070. '07. 9633. 15,667
[Appx]
Thomas, A. O.'06. 8861
Thomlinson, J. A.'07. 3916
Thompson, W. P.'05. 4295
[Appx]. 18,753
Thomson-Houston Co., British.
'05. 15,770 [Appx]. '06.
10,208 [Appx]. '07. 1197A
22,869. '08. 23,071.
Thubé, G. A.'05. 9422
Thwaite, B. H.'06. 13,551
22,434. 26,818
Timm, F. C. W.'05. 15,375
Timofeeff, P.'06. 17,006. '08.
11,522
Titley, J.'06. 21,290 [Appx]
23,271
Tower, W. G.'07. 6954

Traiser, Crefelder Seifenfabrik
Stockhausen &... '07. 24,494
Trent, L. C. '05. 20,865
Turner, C. A. P. '08. 13,941
Tyers, F. '08. 11,953

Urwin, J. '05. 11,696

Vereinigte Porphyry Werke Ges.
'08. 26,455
Verhoeven, P. A. ... '06. 21,778
Vinden, J. '05. 5469

Wade, C. E. '05. 23,307
" J. E. '08. 26,416
Waelde, E. '08. 4847
Wakefield, G. '06. 11,686
[Appx]

Walden, G. H. '05. 14,709
Wallace, R. W. '08. 3572
[Appx]. 27,638 [Appx]
Walter, O. '06. 19,388 [Appx]
Walton, F. '06. 17,432 [Appx]
Waner, G. '08. 27,018
Ward, J. '07. 12,779
" T. '05. 20,640
Watson, G. '05. 19,502. 22,787
" W. '06. 27,073
Wee, E. van der. '07. 11,230
Weeks, W. R. '07. 23,168
Welton, R. '06. 768
Werther, F. O. '07. 28,055
Whalley, A. '05. 4131 [Appx]
Wheeler, J. A. '05. 21,891
Widmer-Ackermann, J. '08.
2549

Wightman, S. G. '05. 19,622
Wilhelmi, O. '07. 3344
Wilkins, G. W. '07. 9300
Willax, K. '07. 27,213
Willis, P. R. J. '06. 5659
Wilson, J. '06. 14,992
" W. '08. 860
Winchester, B. T. ... '05. 22,523

Winter, H. '07. 9787 [Appx]
Winther, A. '05. 15,582
Wittig, F. E. '06. 14,233
Woerdehoff, A. '06. 25,621
Wolfsholz, A. '06. 23,375
Woodard, C. E. '07. 3916
Woof, T. '06. 16,611 [Appx]
24,529
Wright, & Hewlett, Callow ... '06.
12,220 [Appx]
Wunner'sche Bitumen Werke
Ges. '07. 18,101
Wynne, F. '06. 18,835

Yates, J. A. '06. 19,723 [Appx]
Young, E. '06. 5779

Zelensky, M. '06. 2156 [Appx]
Ziegler, J. J. '07. 6475
Zielinski, F. '07. 28,656
Zulkowski, K. '06. 7443
Zürn, P. '07. 26,008
Zwicker, J. G. '06. 2191A

ERRATA.

The following abridgments should be *deleted*, as their subject-matter is now excluded from the contents of this Class by cross-references :—

A.D. **1905.** Nos. 4369. 5513. 5514. 8024. 8814. 9766. 11,609. 14,329. 22,932. 24,244. 24,655.
27,082.

A.D. **1906.** Nos. 1635. 3655. 3970. 5955. 6918. 6950. 10,900. 14,173. 14,297. 14,774. 15,808.
15,907. 16,164. 18,974. 19,186. 19,233. 22,887. 22,901. 24,233.

A.D. **1907.** Nos. 547. 2685. 7179. 10,243. 20,692. 25,071.

A.D. **1908.** Nos. 1455. 2044. 5460. 8307. 15,339. 17,557.

Page 44. Abridgment No. **26,818.** After date add *No Patent granted (Sealing fee not paid).*

CEMENTS AND LIKE COMPOSITIONS.

Patents have been granted in all cases, unless otherwise stated. Drawings accompany the Specification where the abridgment is illustrated and also where the words *Drawings to Specification* follow the date.

A.D. 1905.

577. Elssrich, O. Jan. 11. *Drawings to Specification.*

Fire-proof coverings and compositions.—Two parts of Siberian or Canadian asbestos are trituated with two parts of finely-sifted sand, and to this mixture is added a mixture of one part of water-glass with one part of water. The pasty material thus obtained is then subjected to hydraulic pressure in moulds lined with gauze or similar material, and, after a stiff crust has formed thereon, the pressed material is placed in drying-rooms. The material may be worked into slabs, plates, axle bearings, and other articles, and is suitable for use as an insulating-medium. When used as an axle bearing, the upper layer of the material may be saturated with graphite for the purpose of ensuring a better appearance. Specification No. 11,266, A.D. 1892, is referred to.

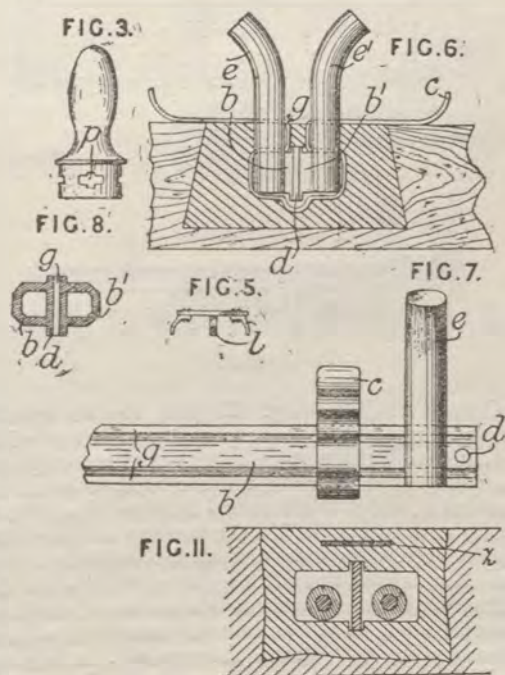
1457. Armstrong, T. J. Jan. 25.

Cements; plasters.—Relates to the manufacture of Keene's and other cements by adding mineral matter to gypsum. The ground gypsum is soaked in the mineral solution, and the mass is moulded, burnt, and ground, thus avoiding the preliminary burning.

1863. Rosner, H. Jan. 31.

Casting.—Conduits for electric conductors are made by casting plaster of paris or the like around a core. The core is made in halves *b*, *b'*, Figs. 6, 7, and 8, and may be of steel and hollow; flanges *g* are fitted, and a metal strip *d* is placed

between the halves, a clip *c* serving to keep them together. The core, preferably greased, is placed in a channel in the wall, the plaster is poured around the core and allowed to set, the central



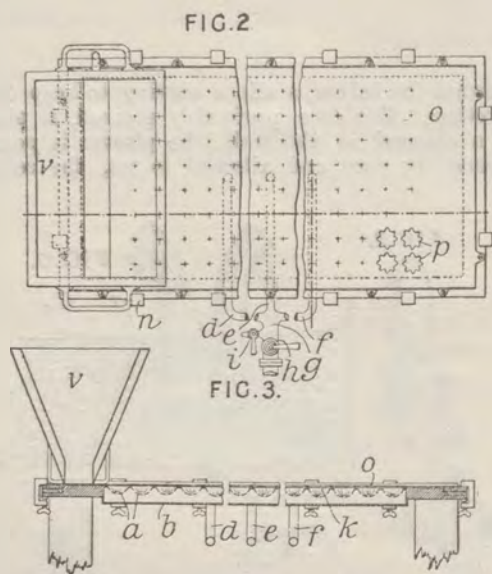
strip *d* is withdrawn by means of some hooking-device passed through a hole *f* at one end, and the halves of the core are taken out by the handles *e*, *e'*. A partition of cardboard or the like, soaked in

paraffin, is placed in the space left by the band *d*, and the cables are introduced into the side channels. Junction boxes are made by using a core, Fig. 3, with registers *p* for joining with the conduits; lids with catches *f*, Fig. 5, are used over these junctions, and a metallic strip *z*, Fig. 11, may be embedded above the conduit, or the conduit, strengthened with a wire spiral, may be made independently and then embedded in the wall.

2343. Heintzel, K., and Cramer, E.
March 21, 1904, [date applied for under Patents Act, 1901].

Plasters; mortars.—Gypsum mortar is stated to be improved and dead-burnt gypsum may be utilized by mixing with a small proportion of the acid sulphates of the alkalies.

2412. Jacoutot, E. J. Feb. 7.



Casting confectionery. Relates to the moulds for and a method of casting sweets with and without centres. Sunk moulds *a* of the pattern required are perforated to communicate with the mould chamber *b*, which is connected by pipes *d*, *e*, *f* to a pipe *g* with two cocks *h*, *i* for vacuum and air inlet, respectively. An elastic sheet *k* is stretched over the moulds and held firmly by clamps *n* on the frame, while over this sheet is a mask *o* of metal or material such as vulcanite, with apertures *p* in it corresponding with the mould openings. A jacketed feed-hopper *v* is run over the mask, leaving a thin deposit in the apertures *p* on the sheet *k*, which is then drawn down into the moulds by means of vacuum. If the sweets are to have centres, the necessary material is run in and the hopper *v* run back again. Delivery is effected in either case by

turning the cocks, when the elastic liner *k* springs back, lifting the sweets with it.

2441. Hunter, J. R. Feb. 7.

Fire-proof compositions.—Relates to the preparation from bone of jagged fibrous ossein, suitable for use in fire-proofing. The bone, after being freed from flesh and fatty matter, is treated with dilute hydrochloric acid to separate mineral matter, or the two operations may be carried out simultaneously. The residue, consisting of ossein, is washed, hydrochloric acid is removed by soda carbonate, and, if necessary, the ossein is bleached by means of bleaching-powder. It is then placed in a heating-engine and afterwards finely divided in a refining or Jordan engine.

2455. Hunter, J. R. Feb. 7.

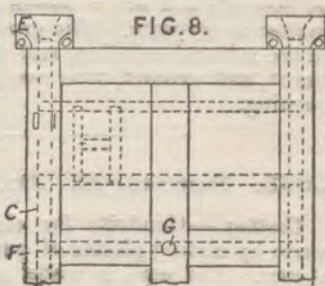
Fire-proof compositions.—Relates to the preparation from bone of a new product, namely, compressed or recombined fibrous ossein. The fibrous ossein is prepared as described in Specification No. 2441, A.D. 1905, but the bone may be shredded without first removing any or all of the foreign substances. The fibre may then be felted, woven, or compressed with or without agglutinants. The compressed material is a non-conductor of heat and does not burn.

2467. Brown, G. B. Feb. 7.

Cements; mortars; plasters.—A mortar, cement, building-composition, or composition for moulded articles is composed chiefly of dry slaked lime, calcium carbonate or other alkaline-earth carbonate, and plaster of paris. To each hundredweight of this mixture are added $1\frac{1}{2}$ oz. of magnesium oxide or carbonate, or mixed oxide and chloride, but other preparations may be used. Brick-dust, sawdust, or fibrous material or colours may be added.

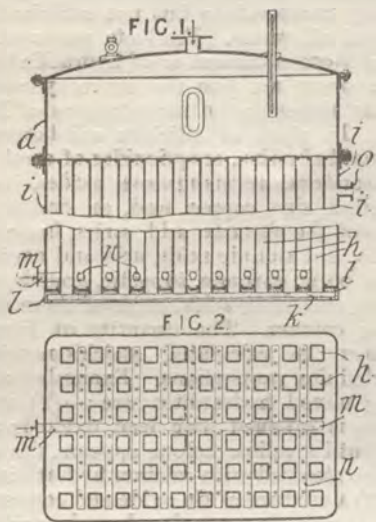
2494. Brookes, J., and Brookes, H. J.
Feb. 8.

Casting.—In a method of making metallic bedsteads without external castings at the joints of the rails, or where the rails are attached to the pillars, the assembled tubes are filled with a metallic or other filling preferably with the aid of pouring-blocks *E* attached to a rail frame *F*. If



the filling composition is to be poured into the tubes at both ends, the frame F may be pivoted at G.

3602. James, R. W., [Roth, R.]. Feb. 21.

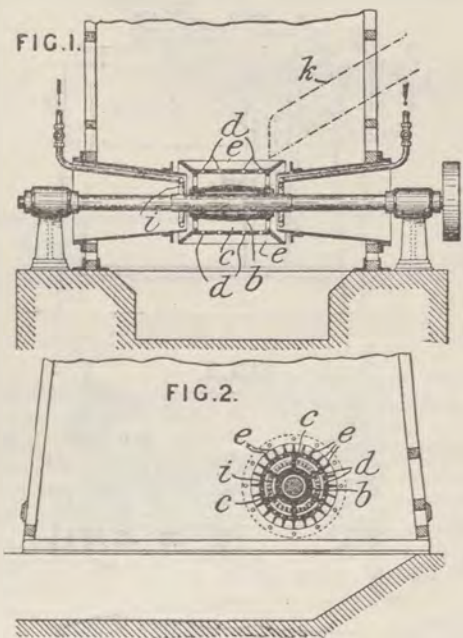


Casting.—Relates to apparatus for the rapid cooling of fluid soaps in which the soap is cooled in tubes dipping into cold water. From a supply drum *a*, vertical tubes *h*, preferably enamelled on the inside, pass downwards through a cooling-vessel *i* and have their lower open ends extending through the bottom of the cooling-vessel. The tubes may increase in cross-section from their upper to their lower ends. At the commencement of the cooling operation, the lower ends of the tubes are closed by a plate *k* which slides in guides *l* provided at the lower part of the vessel *i*. Soap is run into the drum *a* through an inlet at the top so as to fill the tubes and the drum. Water is then admitted to the vessel *i* by the supply pipe *m* having cross perforated branches *n*, and passes out of the vessel by the outlet *o*. When the soap in the tubes *h* has solidified, the plate *k* is removed and a pump is connected to the soap inlet so as to force the soap out of the tubes. A small plug of solidified soap is allowed to remain in the tubes to close the lower ends during the next operation, thus dispensing with the plate *k*. An air outlet, inspection opening, and thermometer are also provided.

3619. Colloseus, H. Nov. 3, 1904, [date applied for under Patents Act, 1901].

Slags, treatment of; cements.—In making cement from molten slag, the slag is finely divided by a jet or by impact on a rotating drum, and is simultaneously treated with a weak solution of calcium

nitrate, magnesium or aluminium sulphate, or any other salt of these three metals or mixtures of such

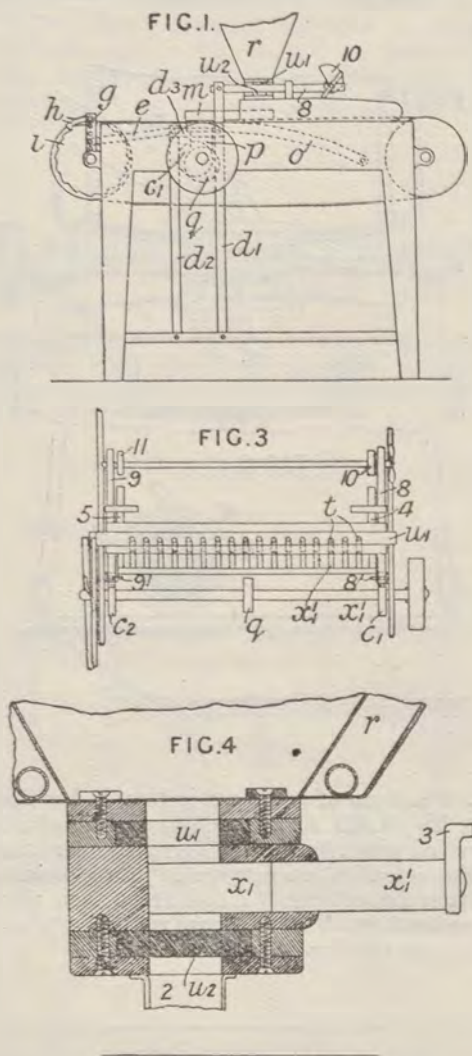


salts. One form of apparatus is described in Specification No. 14,329, A.D. 1905, and consists of a drum *b* provided with ribs *e*, partitions *c*, and perforations *d*. The solutions are introduced into the centre of the drum through tubes *i*, and are driven through the perforations *d*, as the drum rotates, against the molten slag flowing from the shoot *k*.

4171. Frings, H., and Pedersen, C. Feb. 28.

Casting sweetmeats. Relates to means for casting peppermints and like sweets, and consists in adjustments for the feed. Material from the jacketed hopper *r* is sucked down through openings *t* into orifices *x*, on the withdrawal of pistons *x*¹. The slide *u*, Fig. 4, then closes, the bottom slide *u*₂ opens at the same time, and the pistons moving forward force the material through delivery tubes 2 into a mould *m* raised, on the endless band which carries it, by means of a cam *q* operating a casing *p* which presses up the pivoted plate *o*. The endless band is driven intermittently by a pawl *h* and pinion *i* actuated by means of the rod *e*, which is adjustable on the bar *g* carrying the pawl and is connected to the frame *d*₁, *d*₂, *d*₃ reciprocated by cams *c*₁, *c*₂. The guide-rods 8, 9, being connected to the bars *d*, are directly operated, and they move the guide-rods 4, 5 connected to the cross-head 3 of the pistons *x*₁ by means of projections 8¹, 9¹. Cams 10, 11 return these rods 4, 5, and, as the cams are

adjustable, the reciprocation of the rods and therefore the amount of feed can be regulated.



4194. **Boult, A. J.**, [Reiche, M.]. Feb. 28.

Cements; stone, artificial; slags, treatment of; fire-proof compositions.—Relates to an improvement on the invention described in Specification No. 16,794, A.D. 1901, consisting in the preparation of binding-substances containing hydrate water from cement-forming oxides ground to the consistency of flour, for example, so that about 20–30 per cent only will be left on a sieve of 4400 meshes to the square inch. The oxides are mixed with basic oxides and may be converted into cements by calcination. The invention is also applicable to pigments, and, according to the Provisional Specification, to fire-proof materials. The binding-substances may be used in the manufacture of artificial stone by substituting them wholly or in part for the calcium hydrate of artificial lime-sandstones and also when made of silicates, e.g. marl or clay, for assisting the fritting of Portland cement raw materials. If acids, salts, or metallic oxides suitable for forming cements are ground to flour,

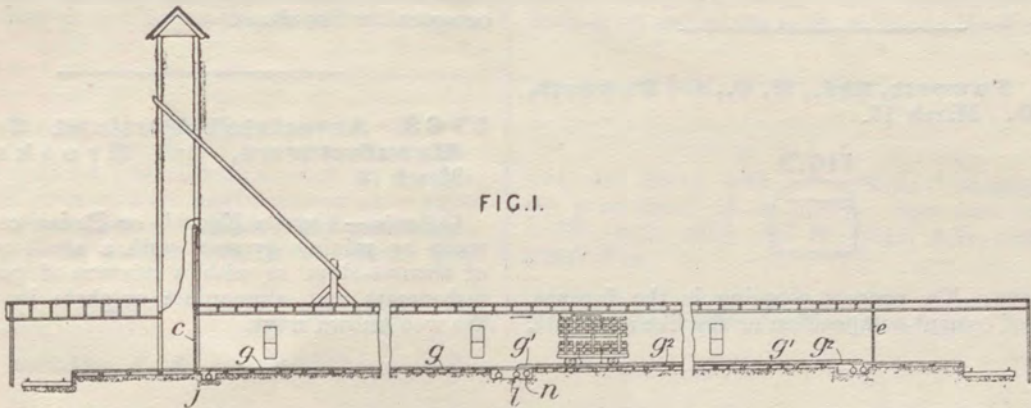
mixed with quicklime or calcium hydrates, and subjected to high-pressure steam so as to give basic compounds, these products will be found to act as slow binders. These hydraulic compounds mixed with sand harden in steam and, if made from silicates only, in the open air and under water. Inferior products prepared in this way are improved by exposing them to superheated steam or moist hot air at a temperature above the opening-up temperature but not sufficiently high to drive off all water. Products produced by the setting of Roman cement or of hydraulic lime with water or steam act like the above hydraulic substances as fluxes in the manufacture of Portland cement. In place of silicious substances, there may be used alumina, sesquioxides of earth metals, iron, chromium, or manganese oxides, iron ores rich in silica, zinc, copper, lead, or similar oxides, or oxides of the chromic acid series, boric, arsenic, antimonie, and stannic acids, acid and neutral salts of silicic, boric, chromic, tungstic, arsenic, stannic, antimonie, and other acids, some of these materials producing colours. The quantity of lime to be added must be calculated stoichiometrically in certain definite proportions. Examples of manufacturing mixed hydraulites are:—(1) antimony pentoxide is calcined with lead oxide in a muffle furnace until a yellow colour appears, the mixture being then steamed with calcium hydrate in a moist state; (2) a mixture of tin oxide and copper nitrate or basic copper chromate in chromic acid may be somewhat similarly treated. Again, in place of sand there may be used calcined kaolin or clay, roasted iron ore containing clay, blast-furnace slag, fossil meal, &c., the treatment varying somewhat in detail although the extremely fine grinding is an essential. The steam product is converted into an hydraulic cement by calcination. When reducing the fritting temperature in the manufacture of Portland cement, the hydratized hydraulite may be added to, or formed in, the raw mass to the extent of 5–25 per cent. In the manufacture of artificial stone, it is advisable to use, in addition to coloured binding-substances prepared by the above-described method, steamed or calcined binders made from white silicates, such as kaolin, silicic acid, and talc.

4369. **Wolff, M.** March 2.

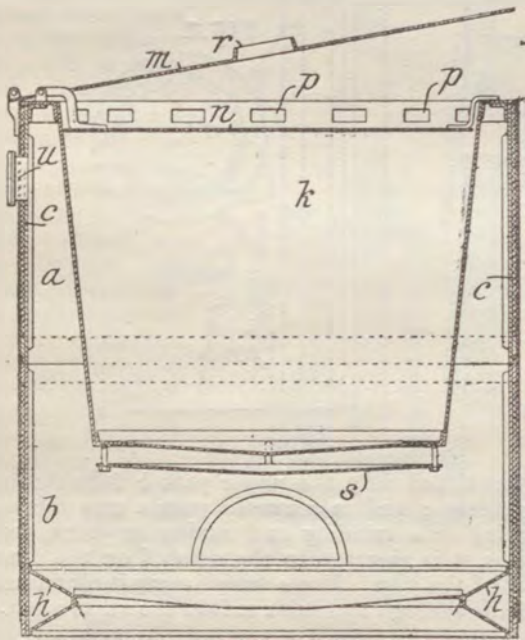
Cements.—Drying-apparatus, of the kind described in Specification No. 22,598, A.D. 1895, [Abridgment Class Drying], is modified in respect of the air inlet, outlet, and heating arrangements. Trucks of bricks, tiles, cement, peat, and timber pass from the inlet *c* along rails to the outlet *e* of the drying-chamber; they nearly cover the width of the chamber but leave a small space at the top. Air enters from the external atmosphere through the open ends of perforated pipes covering the whole floor, and is discharged from the perforations, rising through and drying the materials in the trucks and afterwards passing along the upper space to the stack. The heating-pipes may be arranged transversely, as shown, and there may be a single row *g* near the inlet and a double row *g*¹, *g*² near the outlet, giving a higher temperature. An inlet pipe is connected

to the headers *j, l, n* supplying these pipes, and, when steam-heating is employed, the water of

condensation is led off by pipes connected to all the headers.



5469. **Vinden, J.** March 15.



Asphalts.—In a cauldron for melting asphalt, the furnace gases pass around the sides of the melting-vessel *k* and through the openings *p* above the inner lid *n*, and escape through the central chimney opening *r* in the outer lid *m*. The vessel *k* is hung within a lagged casing *c*, which is made in two ribbed sections *a, b* and has a perforated annular support *h*, on which the fire-bars rest. The bottom of the cauldron is protected from the flames by a baffle *s*, and a chimney or damper *u* may be provided to regulate the heat or draw off the products of combustion when the lids are opened.

5513. **Zellenka, R.** March 16.

Cements.—A sulphur cement is made by melting

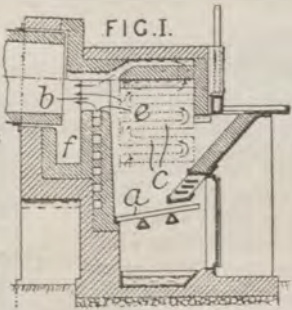
together sulphur and ferriferous sand from foundries, or sand from iron or steel fettling or the like, with the optional addition of colouring-matter. This cement may be used for filling joints between bricks, stone, or metal, for bedding parts of buildings, foundations, bridges, machines, &c., as a jointing-material for pipe or conduit connexions, as a cement for the arms of pulleys, fly-wheels, &c., or for fixing bolts, pivots, or other ironwork into stone &c.

5514. **Zellenka, R.** March 16.

Concretes; cements. — Foundations are formed with a filling-material such as pebbles, sand, broken stones, slag, and the like, and a binding medium, described in Specification No. 5513 A.D. 1905. and composed of sulphur or pyrites and ferriferous sand melted together at a temperature of 150–180° C. The molten binding-medium may also be run between the joints of masonry &c.

5528. **Baudry, J.** Feb. 10, [date applied for under Patents Act, 1901]. Void. [Published under Patents Act, 1901.]

Cements.—Relates to a process for making Portland cement by calcining a mixture of granulated slag and limestone in a gas-heated rotary kiln. Air enters channels *c* and escapes through openings *e* near the fire-bridge *b*, where it mixes with gas rising from a grating *a*. The clinker leaves the kiln by a rectangular cast-iron tube *f*, and is carried to the cooling-apparatus,



after which it is mixed with slags and ground to Portland cement.

5599. Fawcett, Ltd., T. C., and Fawcett, J. D. March 17.

FIG. 3.



Cements.—To prevent clogging in the furnace, blocks of cement-composition or the like are made,

as shown in Fig. 3, with short cylindrical bodies, one end being hemispherical and the other slightly rounded or flat. The body portion may be of octagonal or like shape.

5763. Associated Portland Cement Manufacturers, and Brooks, A. March 18.

Cements.—A green Keene's or Parian cement is made by mixing gypsum with a small quantity of chrome-alum or with a mixture of potassium bichromate and ammonium sulphate in any of the well-known ways.

5765. Associated Portland Cement Manufacturers, Bamber, H. K. G., and Layton, G. R. M. March 18.

FIG. 1.

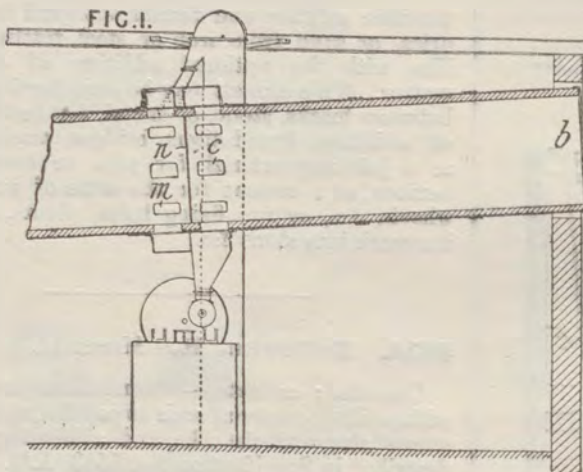
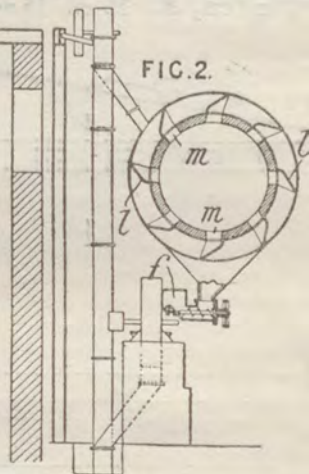


FIG. 2.



Cements.—Relates to the utilization of the heat from rotary kilns for the preliminary drying of Portland cement when being made by the dry process. The kiln may be made in two parts, separated from another by an annular diaphragm *n*, Fig. 1, or two kilns may be alined. The raw

material fed into the upper part *b* falls through apertures *c*, and is conveyed past a trap *f* into a mixing or a grinding and mixing machine, from which it is elevated to the scoop *l* on the lower part of the kiln. These scoops carry it round until it falls through apertures *m* into the kiln proper.

6161. Rivoir, W. March 23.

Casting soap. Soap passes in the liquid state through the orifice *c* into the moulds *a*, rods *d* with chamfered ends *e* being lifted by a rod *j*, operated by projections *i* on the shaft *h*, to close the mould openings and so prevent clogging. To discharge the solid forms, rods *m* in a

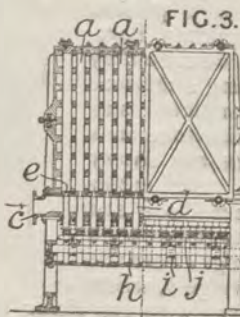
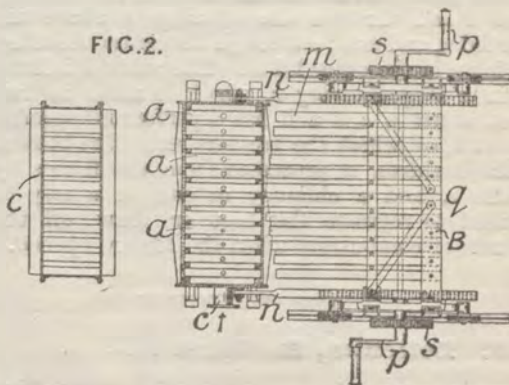


FIG. 2.



staggered row on a movable ejecting-apparatus B are provided, the apparatus being translated by means of spur-gearing p , q , s , taking into adjustable racks n .

The blocks are ejected from the cooling-apparatus into a conveyer C, wires or like being provided, if desired, on one or the other to cut up the forms.

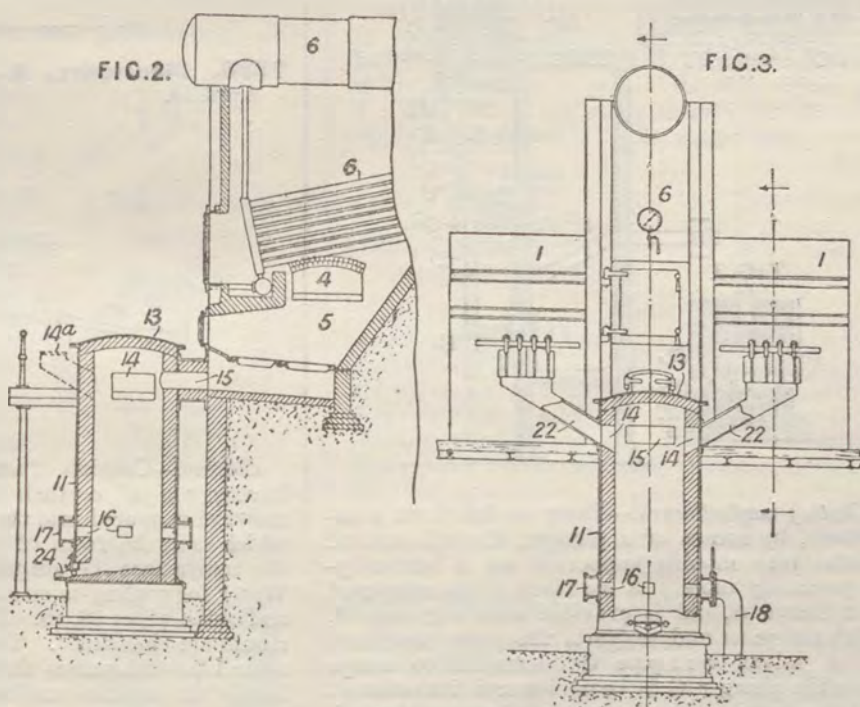
6536. Ross, A. March 28.

Stone, artificial.—Marble is imitated by manipulating and pressing a coloured composition or putty upon or between sheets of glass. The composition may consist of colours, oils, turps, driers, gold

size, &c. mixed with the ordinary materials for the production of a putty. Specifications No. 17,538, A.D. 1897, and No. 2011, A.D. 1903, are referred to.

7521. Brodie, J. A. April 10.

Concretes; slags, treatment of.—The clinker from refuse destructors is heated in a blast furnace either alone or mixed with a flux such as lime, with road sweepings, or with light metal scrap such as tin waste, fuel being added when necessary. The product varies, according to the nature of the refuse and of the materials mixed with the clinker, from a vitreous or glassy substance which can be moulded into bricks to a more or less porous slag. It may be used for pitching road foundations or as a substitute for macadam, for concrete structures, such as are described in Specification No. 6115, A.D. 1901, and for paving-blocks, such as are described in Specification No. 16,005, A.D. 1902. In some cases, the product may be annealed by reheating, and the porous material may, before cooling, be treated with tar or other compound to render it suitable for tar-macadam construction. Figs. 2 and 3 show a suitable form of apparatus, arranged so that the waste gases are utilized in heating a water-tube steam generator in a similar manner to that described in Specification No. 6842, A.D. 1893, [*Abridgment Class Steam generators*]. A destructor 1, placed at each side of the steam generator 6, with the combustion chamber 5 of which they are connected by side flues 4. The clinker passes from the destructors to the blast furnace 11 by shoots 22 and through inlets 14. Inlets 16 communicate with the blast pipe 18 by means of a belt 17, and waste gases pass through the outlets 15 to the



chambers 5. The blast furnace is provided with a removable cover 13, an additional charging-inlet 14^a, and a tap-hole 24. In some cases, provision may be made for opening the furnace throughout the whole of its length. A single furnace may be used with several destructors, a conveyer being arranged to convey clinker from the destructors, not directly connected with the blast furnace, to the charging-inlet 14^a. When no steam generator is installed, the waste gases from the blast furnace are led into the destructor furnaces or into the main flue.

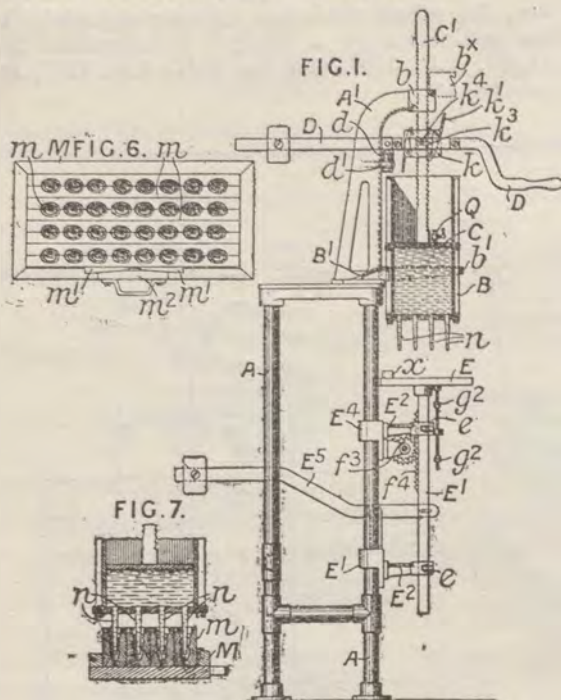
7599. Bach, J. April 10.

Refractory substances.—A lining for furnace walls &c. consists of a pasty mixture of aluminium hydrate and fire-clay or quartz, to which may be

added purified and washed powdered chrome ore or other refractory substances.

[Reference has been directed under Patents Act, 1902, to Specification No. 1029, A.D. 1876.]

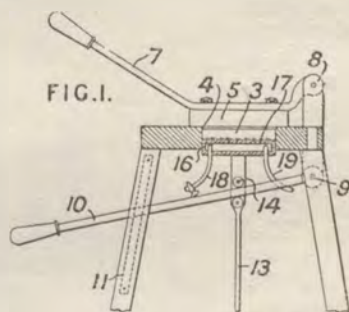
7734. Knorpp, P. April 11.



Casting confectionery.—Paste is fed from a receptacle, by means of a plunger, through vertical nozzles into moulds supported on a vertically-reciprocating table. A standard A^1 is supported on a frame A , and is provided with a bracket B^1 , which embraces and supports the paste receptacle B . A valved vent-pipe Q allows air to escape when the plunger C is being lowered into contact with the paste. The plunger rod C^1 passes through a guide b , and is operated by a counterbalanced hand-lever D , pivoted to a pin d , which turns in a perforated ear d^1 , thus allowing the lever and plunger to be swung round horizontally when the receptacle is being filled with paste. A pivoted plate b^x is raised to allow the plunger rod C^1 to leave the guide b . The toothed rod C^1 is guided in a keeper k and actuated by spring pawls k^1 , pivoted at the upper front and lower rear corners of the keeper, respectively. The pawls are, when necessary, kept out of engagement with the teeth by pins. The lever D is forked to embrace the keeper k , connexion being made by pins k^4 on the keeper sliding in slots k^3 in the forked parallel portions of the lever to allow the necessary play. When the plunger is being raised, the friction is sufficient to prevent it from descending again between the up-strokes of the lever. The mould-table E is mounted on a vertical rod E^1 , guided in sleeves e on brackets E^2 secured to transverse supporting-plates E^4 . The table is raised to bring

nozzles n , at the bottom of the receptacle B , into the moulds, as shown in Fig. 7, by means of a hand-wheel, which operates a pinion f^3 and rack f^4 . A ratchet-wheel and a pawl, pivoted to lugs on the upper supporting-plate E^4 , lock the platform in position. A weighted lever E^5 tends to lift the platform F , the motion of which is regulated by adjustable stops g^2 . The moulds m , Fig. 6, made of plaster of paris, are arranged on a frame M , which has a raised rim and is retained in proper position on the table E by stationary or adjustable stops x . The longitudinal mould-sections are locked in position by wedges m^1 inserted between the moulds and a front cleat m^2 . By substituting suitable dies in place of the nozzles n , material may be extruded on to confectionery &c for ornamenting it.

7886. Brancart, A., and Michotte, E. April 13.



Casting.—Consists of a mould and press for tiles having "keys" on their backs. Molten vitrified material is poured into the mould 3, the bottom of which is in the form of a hollow box 16, having the upper face 17 shaped to form the "keys." Water for cooling is circulated by means of inlet and outlet pipes 18, 19. The upper edges 4 of the mould are chamfered. The box 16 is mounted on a bar 13, which passes through a guide-bar at the base of the machine, and is movable vertically by a hand-lever 10, pivoted at 9. The bar 13 passes through a slot in the lever 10, and is held in position by rollers 14, while the lever 10 moves between plates 11, which form springs to hold it in any desired position. The top of the mould is closed by a plate 6 on a handle 7 hinged at 8. After pressing, the tile is allowed to cool, by the plate 5 is lifted, and the tile is pushed out by raising the lever 10, when it is made to slide on to a collector and is taken to the annealing-oven. A number of presses may be arranged on one table.

8024. Lainé, E. April 14.

Plasters.—Plaster is made from precipitated magnesia mixed with a liquid consisting of 3 parts of magnesium chloride and 1 of alcohol denaturized by acetone to which cellulose and gum elemi, gum sandarach, or the resin of *pinus laryx* have been added.

8285. Bruhn, B. April 19, 1904, [date applied for under Patents Act, 1901].

Cements; slags, treatment of.—Slags and other silicate mixtures in a molten state are mixed with a very small quantity of alkali or alkaline salts for the production of cements. Specifications No. 24,092, A.D. 1894, and No. 18,623, A.D. 1903, are referred to.

8398. Sheppard, F., and Kelly, T. D. April 19.

Concretes.—A composition consisting of Kentish

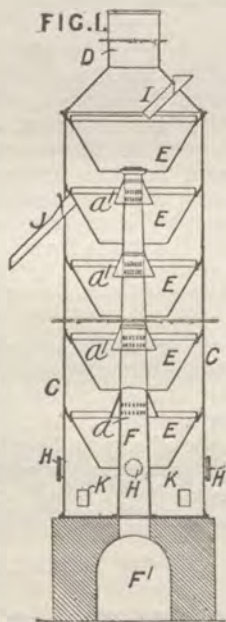
rag stone dust and Bath-stone dust made into a slurry with Portland cement is mixed with small pieces of slag and used for paving, steps, treads, and the like.

8804. Thom, T. M. April 26.

Stone, artificial.—Blocks of lime are submitted to the action of carbon dioxide in a partial vacuum instead of under pressure as heretofore. Thus, the blocks are placed in a chamber, a vacuum of about 27 inches is produced, and then gas is allowed to enter from time to time so as to maintain the vacuum at nearly 5 inches.

8814. Johnson, G. W., [Matcham, C. A.]. April 26.

Cements.—In apparatus in which the granular material to be cooled, e.g. cement, falls down through a series of frusto-conical deflectors arranged in a casing and is cooled by an upward current of air, arrangements are made to dispense with the use of special draught-inducing apparatus. The material enters through a valved opening I the cylindrical casing C, which is fitted with the deflectors E of less diameter than the casing, and is removed through apertures K, the surplus escaping by a shoot J. The cooling-air, supplied by the passage F¹ to the vertical pipe F closed at its upper end, escapes into the casing through holes a provided with hoods a', and passes to the stack D



by way of the annular spaces between the deflectors E and the casing wall. Additional supplies of air may enter the pipe F through valved pipes H. The air in the stack D may be utilized to supply boiler furnaces or calcining-kilns.

8900. Klobukowski, W. P. April 27.
Drawings to Specification.

Cements; refractory substances.—A fire-proof cement for jointing metal plates of stoves consists of a mixture of fire-clay, burnt clay, asbestos wool, and water, and a mixture for filling concave fire-plates consists of fire-clay, graphite, carborundum, asbestos wool, metal scraps, and wire cuttings, mixed with water, isinglass, molasses, dextrin, or like binding-material.

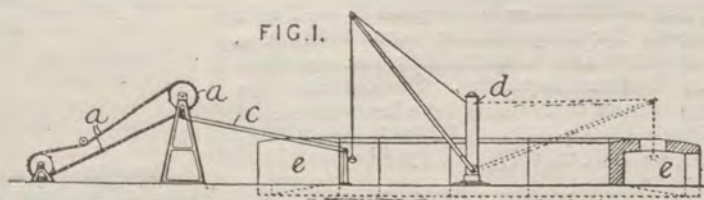
9221. Thom, T. M. May 2.

Stone, artificial.—In the manufacture of artificial marble, dolomite, and the like, the natural product is imitated closely by slaking the lime used with a solution of a mixture of sodium, potassium, and magnesium chlorides and magnesium and calcium sulphates.

9249. Ridley, T. W. May 2.

Casting; asphalts.—

Slag for macadam pavements is cast in an endless chain of pyramidal moulds a, and the cast blocks drop on to an endless conveyer c, from which they are taken by a crane d to annealing-kilns e. The blocks are afterwards broken, and, if desired, tar is mixed with the broken slag while still hot.



9350. Butterfield, J. C. May 3.

Asphalts.—A binding and dust-proofing material for roads consists of petroleum or other mineral oil and nitrobenzole or other nitrated hydrocarbon, with or without lime or other basic material. These may be used with a binder consisting of fine granite, chalk, &c., with or without asphalt or pitch or both. In one method, asphalt, pitch, or both are melted, and, after the addition of sufficient fine granite, flint, or sand and limestone to form a paste, the product is cooled on a cold plate, broken up, and mixed with the remainder of the fine granite &c. in stated proportions. It is then sifted and mixed on a board with petroleum, shale, or other mineral oil and nitrobenzole, and is ready for use as a road bedding or as a binder for admixture with the ordinary road metal.

9422. Préaubert, L., and Thubé, G. A. May 5, 1904, [date applied for under Patents Act, 1901].

Asphalts.—A composition consisting chiefly of bituminous materials and casein is used for laying dust on roads, or, when mixed with the usual materials, for making roads. Wood blocks for paving may be immersed, before laying, in the mixture. The casein is dissolved in water with the aid of alkali or other substance, and the bituminous substance, softened by heat, is mixed with it, preferably in the proportion of 70 to 25. Fats, colours, and decolorants such as lime or cement may be added, and the product is diluted as desired.

9439. Romney, H. R. May 4.

Fire-proof compositions for making casings for electric conductors are produced by mixing asbestos fibre with china clay, magnesite, or other loading and filling material, with or without sodium silicate, and adding to the mass sufficient water to produce a pulp. The casing, when dry, may be soaked in a sodium-silicate solution.

9610. Goldschmidt, H. May 6.

Refractory substances.—Water-glass is used as a binding-agent for magnesia or corundum, or a mixture of them, in the manufacture of crucibles for use in the thermit process. The Specification states that similar ingredients have been described in Specifications No. 4422, A.D. 1877, No. 27,825, A.D. 1897, and No. 21,807, A.D. 1902.

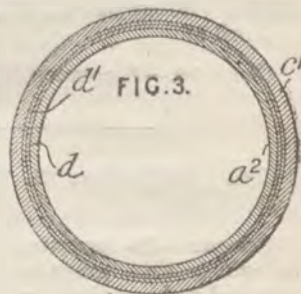
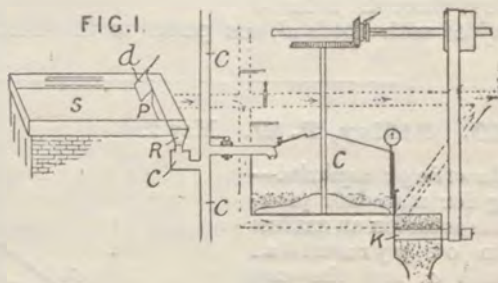
9766. Toyn, H. May 9.

Cements.—A cement, consisting chiefly of litharge, Paris white, and boiled linseed oil, is used for

jointing steam joints or the like, or for heat non-conducting in the form of bricks or slabs. The proportions preferred are : litharge 50 parts, Paris white 20 parts, linseed oil 25 parts, ochre 4.5 parts, and binder, such as slagwool, asbestos, or hemp dust, 0.5 part.

9877. Queneau, A. L. J. May 21, 1904, [date applied for under Patents Act, 1901].

Refractory substances.—Fire-clay zinc retorts, crucibles, and other metallurgical vessels subject to the action of scouring slags are made with one or more inner or outer layers of fire-clay mixture in which some or all of the sand is replaced by an inert or basic material, such as chromite, carborundum, or graphite. In the manufacture of the retorts, fire-clay mixed with the inert or basic material, preferably in granular form, is pugged and hammered. The material thus prepared is superimposed on the prepared fire-clay and the whole mass is hammered to a solid wad and introduced into a retort press. In some cases, intermediate layers d , d' of material containing less basic material may be introduced between the main body a^2 and the surface layer c' of the retort. Communited graphite mixed with fire-clay, or fire-clay and sand, may constitute the layer next to the main body of the retort, a thin outer protecting-layer of clay and sand being provided. In all cases, the protective layer may be formed either outside or inside the vessel and may vary in thickness or be omitted at the desired places.

**10,722. Bale, F.** May 23.

Cements.—Relates to the treatment and utilization of residues obtained in the evaporation of brine. After the evaporation has been conducted to as low a point as possible in the fine-salt pans S, water is admitted, preferably after the scale has been loosened, and the mixture is allowed to boil until the salt in the scale is dissolved. The mud is swept out through a door d in a movable partition P,

and is removed thence into a pocket R. The gypsum mud is washed through a strainer in the bottom of the pocket and passes by conduits *c* to a converter C, where it is separated from the water by decantation and afterwards dried at 150–200° C. for use as a plaster or cement. The process is also applied to the treatment of scale and sludge from the broad salt pans. In this case, the scale is ground to powder and treated with cold water from the solution of the salt. The movable partition mentioned above may in some case be replaced by a special pocket. The operations may also be carried out in a circular salt pan provided with a rotating scraper. The converter C used for drying the gypsum is of this construction, and is provided with a mill K for grinding the product.

10,902. Smith, R., and Atherton, H.
May 25.

Asphalts.—An asphalt composition for road-making and the like consists of a mixture of one part of tar containing 3 per cent of sulphuric acid and 5 parts of sand, granite, stone chippings, or the like.

11,191. Kurtz, E. Braschler. June 2,
1904, [date applied for under Patents Act, 1901].

Asphalts.—Relates to a process for treating asphalt, pitch, tar, paraffins, earthwaxes, petroleum residues, resins, balsams, oils, fats, and the like, with soap and colloids, such as starch, gums, albumins, caseins, pectins, vegetable mucilage, soluble silicates, and colloidal oxides, so as to render the asphalt &c. miscible with water, the said process differing from the known ones in that the colloids are added to a solution of the asphalt &c. In place of soap, substances which produce soap, e.g. fatty acids, fats, resins, and the like, may be used in the presence of alkali, alkaline earth, or borax, and resins, oils, fats, and the like as well as inorganic fillers may be added to the asphalt in addition to the soap. A convenient method of preparing the asphalt is to heat 3 parts of soap and 2 of starch in 10 of water, and then add gradually, e.g. by means of a nozzle, 90 parts of asphalt in 200–300 parts of benzol, which is volatilized and recovered. When pitch, tar, &c. are used in place of asphalt, different solvents are employed. The paste produced, diluted with water if necessary, is used for impregnating paper, millboard, &c., for applying to wood and brickwork, for briquetting fuel and ores, and for making roads or rendering them free from dust.

11,609. Richter, A., and Glück, T.
June 2, 1904, [date applied for under Patents Act, 1901].

Casting.—Relates to improvements on the preparation of material for filling the handles of sticks and umbrellas and for like purposes described in

Specification No. 13,308, A.D. 1903, [*Abridgment Class Umbrellas &c.*]. Burnt alum is mixed with water and boiled for some minutes until the amount of water contained in the mass is about 30 per cent, and the mass thus produced is poured into the handle. It is stated that this material sets to a hard marble-like substance which is not affected by water.

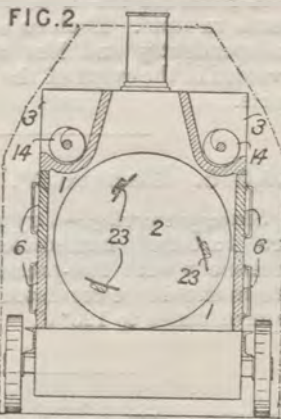
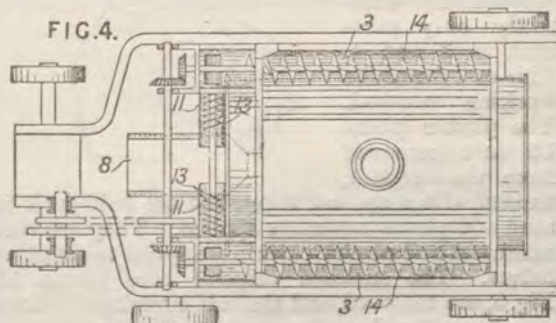
11,696. Carr, W. R., and Urwin, J.
June 3.

Refractory substances.—Fire-bricks are made of 4 parts by weight of fire-clay and 1 part of coke or coke breeze. Specification No. 13,690, A.D. 1891, is referred to.

12,105. Meyenberg, J. June 9.

Fire-proof compositions.—An insulating-composition consisting of animal filaments is fire-proofed by soaking in silicate solution containing hydrocarbons.

12,597. Rózsa, M. June 17.



Asphalts.—A transportable machine, especially suitable for mixing and heating asphalt for moulding purposes, is provided with feeding-troughs in which the material is preliminarily heated. A drum 2, Fig. 2, rotates in a heating-chamber 1, the side walls of which are formed of adjustable iron plates 6, lined with a fire-resistant. The material is fed by worms 14 along the troughs 3, in which it is heated by the waste gases, into cross-tubes 11, Fig. 4, from which it is fed by worms 13 into a hopper 8, which is adjustable along horizontal bars

and connects with a door in the drum opened by a rack and segment. The drum 2 may be formed of two cylinders meeting at an angle, and is provided with stirrers 23. The fire-box is detachably mounted beneath the drum, and is provided with wheels to be separately transportable. Liquid can be added through the hopper 8, and the contents are discharged at the rear end of the drum.

12,786. Bittner, H., and Porisch, M. June 20. *No Patent granted (Sealing fee not paid).*

Casting.—The original model 1, Fig. 1, is sunk in sand to the depth indicated by the dotted line, which is the greatest that will permit removal without damage to the mould. Under-cut parts are covered with core pieces 2 formed of plaster of paris, and a cast is taken of the model with the core pieces on it, reproducing correctly only parts such as 3 and 4. This cast forms the working model. The plaster pieces 13 are removed from the original, treated with soap and water, and are half sunk in sand and plaster coverings applied. They are then taken out and plaster coverings applied to the other halves. The enclosed original core pieces 13, Fig. 3, are removed, and the half-coverings 14 form core boxes for the subsequent duplication of these parts in sand. Each core part can thus be made independently and loss of the whole mould is avoided in the event of the breakage of one of these parts.



13,085. Hansen, P. June 24.

Stone, preserving.—Dry moulded cement castings are hardened immediately after moulding by treatment with low-pressure steam. The flow of steam should be regulated so that the temperature approximates to 120° F.

13,797. Metz, A. July 4. *Drawings to Specification.*

Concretes.—Steps or stairs are formed from a composition of asphalt, bitumen, and finely broken granite and stone dust which are well mixed and heated at a high temperature.

13,863. Mason, J. July 5.

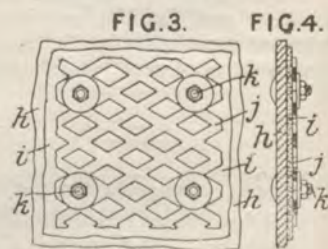
Concretes.—Treads for stairs and the like are filled with a mixture of corundum, Portland cement, clay, and silicious earth, with or without sodium-silicate solution.

13,886. Colloseus, H. July 5.

Slags, treatment of; cements.—Relates to an improvement on the process described in Specification No. 18,623, A.D. 1903. For making a cement resembling trass from blast-furnace slag, lime-milk is injected into the molten slag, no subsequent drying being necessary.

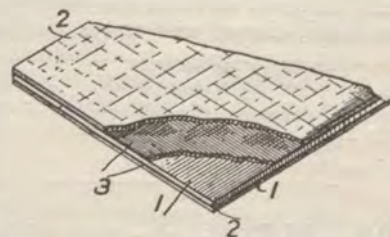
14,117. Berner, E. July 8, 1904, [date applied for under Patents Act, 1901].

Fire-proof coverings.—Fire-proof doors are constructed by applying to the metal plate *h* a layer *i* of asbestos, which is protected by covering with a perforated metal plate or netting *j*, the whole



being secured together by bolts *k*. The Specification in the original form as published under the Act of 1901 also describes a heat insulating or resisting covering for girders, beams, and the like, consisting of a double casing of thin sheet metal packed with asbestos; for pipes consisting of a layer of asbestos protected by a surrounding seamless tube; and for plates and the like comprising an asbestos layer and an outer continuous or perforated metallic sheet or network. This subject-matter does not appear in the Complete Specification as accepted.

14,288. Jacob, F. D. March 9, [date applied for under Patents Act, 1901].



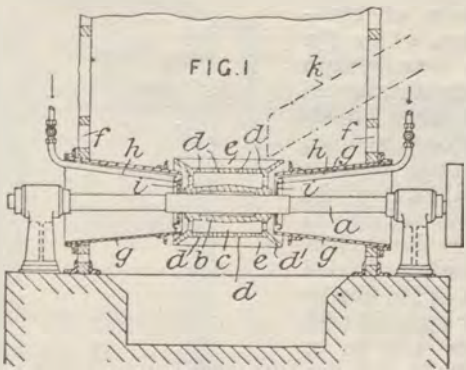
Fire-proof coverings.—Metal plates 1, such as sheet steel, are covered on both sides with a fibrous fire-proof material 2, such as asbestos, mineral wool, &c., preferably in sheet form and cemented

to the metal base by a weather-proof composition 3 consisting of india-rubber solution and petroleum asphalt, preferably in the proportion of 1 oz. of rubber solution to 1 gallon of asphalt.

14,329. Colloseus, H. July 11.

Slags, treatment of.—In an apparatus for pulverizing blast-furnace slag, the slag is conducted by a shoot *k* inside a casing *f* and towards a drum *b* which is rotated by a shaft *a*. The drum is provided with internal partitions *c* and external longitudinal ribs *e*. Nozzle-like orifices *d* are provided in the circumferential wall of the drum, and flanges *d'* prevent the slag from falling on the shaft. Conical conduits *g* extend into the casing *f* and terminate near the open ends of the drum. Pipes *h* extend through the conduits, and terminate in annular tubes *i* perforated on the sides facing the drum. Aqueous solutions of salts, or other liquids, are injected under pressure through the tubes *i*, the liquid being thrown by the rotation of the drum against the wall and out through the nozzles *d* and

mixed with air which has been sucked in through the conduits *g*. The jets of liquid and air come into contact with the slag flowing from the shoot, the slag being pulverized and dispersed before



reaching the surface of the drum. The pulverized slag does not need drying before use, the small quantity of liquid used being evaporated in the process of pulverizing.

14,709. Walden, G. H. July 18.

Asphalts.—An asphaltic cement is made by mixing marl 10 parts, coal 2 parts, shale 4 parts, and fire-clay 10 parts, drying over a slow fire,

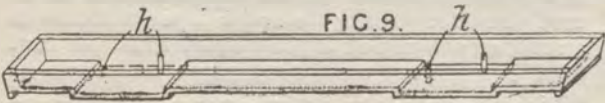
grinding to a fine powder, and stirring in gas-tar. It may be used for covering stone, wood, and brickwork.

14,908. Johnson, A. July 20.

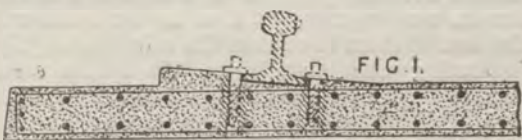
Casting.—Lavatory and closet basins &c. are cast from a liquid mixture of clay, flint, &c., a solution of soda, water-glass, and water. The materials are admitted through an inlet into the space between two moulds, this space corresponding to the shape and thickness of the article to be

formed. The moulds are provided with air vents. Ball and China clays are preferably used mixed with flint or quartz and stone or feldspar, two tons of this mixture being made suitable for casting by the addition of 5½ lb. of soda, 5½ lb. of water-glass, and 44 gallons of water.

15,164. Habay, P. July 25, 1904, [date applied for under Patents Act, 1901].

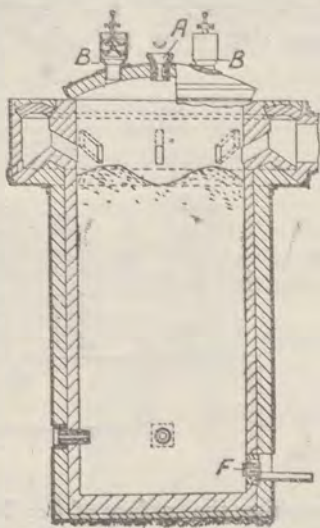


Casting.—A hooped cement-concrete railway sleeper consists of a core of concrete completely enclosed by a metal frame, which is placed in a mould, Fig. 9, into which the concrete is then introduced. Holes for securing the rails or chairs thereto are formed by wood pegs *h*. The sleepers are made thicker at the places where the chairs or rails are attached, and a notch is formed for the rail to fit in, as shown in Fig. 1, or a recess *E*, Fig. 3, to take a projection cast on the chair base.



15,375. Timm, F. C. W. July 26.

Slags, treatment of; cements.—Relates to the preparation of blast-furnace slag for the manufacture of cement, mineral wool, glass, building-stones, and the like, and consists in allowing the molten slag to flow downwards through a heated mass of the flux or other material with which it is to be admixed, so that a homogeneous solution of the latter takes place. A mixture of flux



and coke is periodically introduced into a blast furnace through hoppers B while molten slag is continually admitted through the funnel A, the contents of the furnace being maintained in an incandescent state. The material flows out through the passage F. The most commonly used flux is lime, but ferric oxide, pyrolusite, alkali, and other substances may also be employed according to the

nature of the material required. Gaseous or other fuel may be used instead of coke. Specifications No. 14,010, A.D. 1884, and No. 22,004, A.D. 1892, are referred to.

15,582. Hoffmeister, W., Hundt, H., Eifer, C., and Winther, A. July 29.

Stone, artificial; cements.—Artificial-stone plates or the like are made by applying a water-glass composition to a glass plate or other foundation, which may be placed over the copy to be reproduced. For example, for pictorial productions, the composition is spread so that raised outlines are made which form boundaries for filling in with variously-coloured water-glass compositions. The compositions consist of disintegrated glass, ceramic material, porcelain, burnt clay, sand, sandstone, quartz, marble, ore, and the like, with water-glass as a binding-agent and with or without colours, the product being treated with acids. The glass plate may be first covered with paraffin or the like so that, when sufficiently dry, the layer of water-glass composition may be stripped off and used as an ornament for house fronts, for internal decoration, transparent plates, chimney plates, plates for bathrooms, floor and wall coverings, mosaics, fillings, panels, pictures, &c. Specifications No. 28,789, A.D. 1897, and Nos. 15,102 and 24,612, A.D. 1899, are referred to.

15,753. Kellett, S., Richardson, F. W., and Buttermere Green Slate Co. Aug. 1.

Stone, colouring.—Slates are coloured by applying metallic-salt solutions, such as those of iron or chromium, with or without a flux, and then heating. For example, iron or iron oxide is dissolved in acids, such as nitric, hydrochloric, sulphuric, hydrofluoric, acetic, or formic acid, and the solution applied to the slates, or aqueous solutions of the iron salts of these acids, with or without free acid, may be used. The impregnated slates are heated in a gas, coke, or other oven or furnace and are then gradually cooled. In some cases, they are heated with the products of combustion to the maximum temperature, and then hot air is allowed to play round them to oxidize the salts thoroughly. In colouring with iron salts, the impregnated slates may be dried in an oven in a strong current of air and then roasted, cooled, washed with water, and dried in an oven at a low temperature.

16,841. Richards, W. Aug. 19. No Patent granted (Sealing fee not paid).

Cements.—A cement for attaching glass or pottery tiles to bricks consists of a mixture of builder's mastic 6 parts, a cement such as Parian or Keen's cement 2 parts, whitening 2 parts, fine sand 1 part, fine glass 1 part, boiled oil $\frac{1}{4}$ part, and

lead oxide 1 part, to which may be added zinc oxide 1 part. The proportions given are by volume and may be varied.

17,534. Jenkins, A. R. Aug. 30.

Asphalts.—A plastic composition for making roads and for other purposes consists of a mixture of rock asphalt, tar, anthracite pitch, and petroleum shale. 500 parts of anthracite pitch are heated to a temperature of 160° F. with 250 parts of shale until the mixture attains the consistency of thin treacle, after which powdered rock asphalt is blown in and the tar added. If the composition is to be used alone for coating the upper layer of stones in a road, an amount of asphalt equal to 33 per cent of the combined weight of pitch and shale is added, while, if for coating the lower layer of stones, 5 per cent will suffice. The tar is added in the proportion of about 10 per cent of the combined weight of the other ingredients, but, when the composition is to be used as a binding-agent, as much as 75 to 90 per cent may be used.

17,700. Babits, A. J. von, and Mandics, E. Sept. 1.

Stone, artificial, used in the manufacture of safes &c., is made from a mixture of quartz, sand,

en ery, carborundum, or the like 100 parts, with magnesium chloride 25 parts, and water 25 parts. Magnesium carbonate can be added if desired.

17,890. Seaboldt, B. Jan. 6, [date applied for under Patents Act, 1901].

Refractory substances.—Relates to a process for treating "siloxicon" so that it may be moulded into various shapes such as bricks for furnace linings, crucibles, &c., and consists in adding various fluxes to the siloxicon granules and heating the moulded masses to a high temperature. An example is given in which small amounts of powdered fire-clay and of bran or wheat or oat chaff are added to the siloxicon granules and a weak solution of common salt is added in sufficient amount to render the mass capable of being moulded. The mass is then preferably allowed to stand for some hours, and is then moulded into bricks, which are dried, compressed, and stacked in a kiln. The kiln is smoke-dried and is then sealed and heated to a temperature sufficient to cause the added materials to be wholly or in part driven off, while the siloxicon granules become fluxed together. Other examples of suitable mixtures are: (1) siloxicon, clay, and sawdust or chaff; (2) siloxicon, clay, sodium silicate, and salt; (3) siloxicon, clay, sodium silicate, salt, and sawdust or chaff. In some cases, sulphur also may form a constituent of the mixture.

18,524. M6lin, A. E. Sept. 13. *No Patent granted (Sealing fee not paid).*

Asphalts.—A composition of molten tar, preferably 5 parts, bleaching-powder 5 parts, and quick-lime 2 parts is used for making floors, pavements, cycle and motor tracks, drives, and the like. Before spreading, a foundation of sand or lime is put down.

18,753. Thompson, W. P., [Bouvier, A.] Sept. 16.

Refractory substances.—Saggers and bricks for kilns are formed from a product made by kneading crystals of alumina or silicon carbide, obtained by fusion in the electric furnace, with sufficient ceramic paste to ensure the requisite degree of compactness and impermeability. The crystals are kept as large as possible and form a skeleton which resists cracking and breakage from shock or sudden cooling. Magnesia or baryta similarly treated may also be used.

18,806. Schumacher, W. Sept. 18.

Slags, treatment of; stone, preserving.—Slag blocks are made by coarsely disintegrating the slag

as it comes from the furnace and steam-heating it before it passes to the presses. It may be mixed with a little lime, and the blocks may be subsequently hardened in pressure steam.

19,108. Mathis, E. Sept. 21.

Asphalts.—An artificial asphalt is made from waste shale or shale rock and tar or tar residues boiled together, the acid in the tar being neutralized by lime, by fractional distillation, or by other means. A part of the shale may be replaced by slag or by other silicates.

19,180. Peters, H. Sept. 22. *Drawings to Specification.*

Cements.—Portland cement is made from a mixture of slurry and coal which is first dried and then burnt in lumps in a vertical or like kiln with the aid of an air blast.

19,297. Bishop, A. E. Sept. 25.

Cements.—A composition for the backings of glass tiles and for securing the tiles to walls &c. consists of ground calcined magnesite 7 parts, concentrated sodium-silicate solution 4 parts, precipitated silica 3 parts, and manganese dioxide 3 parts.

19,502. Butterfield, J. C., and Watson, G. Sept. 27. *Drawings to Specification.*

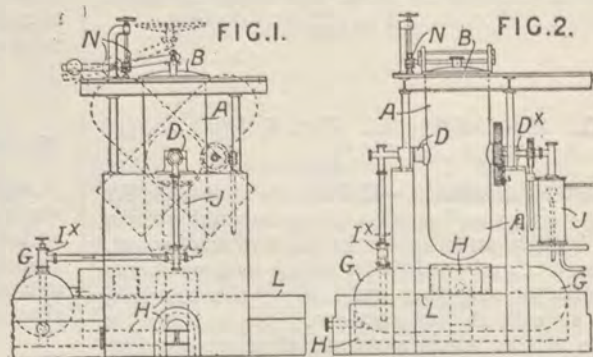
Cements; mortars.—In a method of and apparatus for sterilizing sewage sludge and other waste matter of an organic origin, the sludge is treated in a retort through which steam is passed, the retort being heated to such a temperature that the fixed carbon is burned within the retort by the oxygen resulting from the decomposition of the steam. The material discharged from the retort may, after treatment dependent on the nature of the precipitant used, be used for such purposes as brick-making or cement-making or as a precipitant for fresh sludge. When lime has been used as a precipitant, the spent material may be ground and formed into a paste for use as mortar.

19,622. Wightman, S. G. Sept. 28.

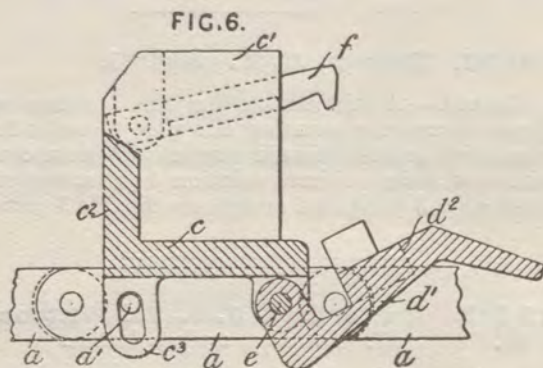
Asphalts.—A mixture of resin, iron oxide, and earthy matter is employed for paving, and for making bricks, tiles, pipes, stones, and cements. The ingredients may be mixed in various ways and either hot or cold. Bricks &c. may be hardened by immersion in water.

19,686. Freakley, W., and Bill, R. Sept. 29.

Asphalts.—In an apparatus for producing dustless tar paving by mixing slag &c. with tar, creosote, or other bituminous material, the hot slag is fed into and agitated in a rotatable mixer A, which is heated by a furnace H and is connected to a tar boiler G and a condenser or exhaust pump J through hollow trunnions D, D^x, respectively. After the mixer has been exhausted, tar is admitted by means of the valve I^x, the vacuum being maintained. Air at normal or high pressure is then admitted and the mixer is rotated, the excess of tar being drained off through a cock in the cover B for straining and subsequent use again in the boiler. The counterweighted lid B is



operated by hand-gear N, and the finished product is discharged into trucks or on to the dumping-floor L.

19,884. Ridley, T. W. Oct. 2.

Casting.—The moulds in which slag bricks are cast are made in two parts, one part consisting of one side c², one end c¹, and the bottom hinged at a¹ to the usual endless chain a, and the second part comprising the other end and the other side d¹ hinged on a sliding hinge e to the first part and held to it, in the assembled position, by a catch f engaging a projection d². A rotating wheel by means of spaced inclines on its periphery disengages the catch f at intervals and contacts with the second part of the mould to push it sideways, the two parts falling apart as the mould passes round the end pulley supporting the chain. Slots in lugs c³ on the bottom c allow the first part of the mould to move about the pivot, while passing round the bend, the motion, which is sudden, helping to disengage the bricks.

20,070. Thom, T. M. Oct. 4.

Stone, artificial.—Relates to the artificial production of building-stones having the exact characteristics of the natural articles, whether they be of compact, magnesian, or oolitic origin. The waste debris of

limestone rock, such as Portland or Bath stone, is crushed and screened so as to obtain the grains in their original condition, or, in the case of homogeneous limestones such as the magnesian, the raw material is ground to the degree of fineness exhibited in the natural stone, and the material so obtained is thoroughly mixed with a quantity of lime and slaked. The mixture is then pressed in moulds under a pressure of from $\frac{1}{4}$ to $\frac{1}{2}$ ton to the square inch, dried in a hot chamber, and finally carbonated by a process similar to that described in Specification No. 13,467, A.D. 1900, but in which a much lower pressure is employed. Iron oxide or carbonate may be added to the stone for the purpose of colouring it.

20,640. Ward, T. Oct. 12.

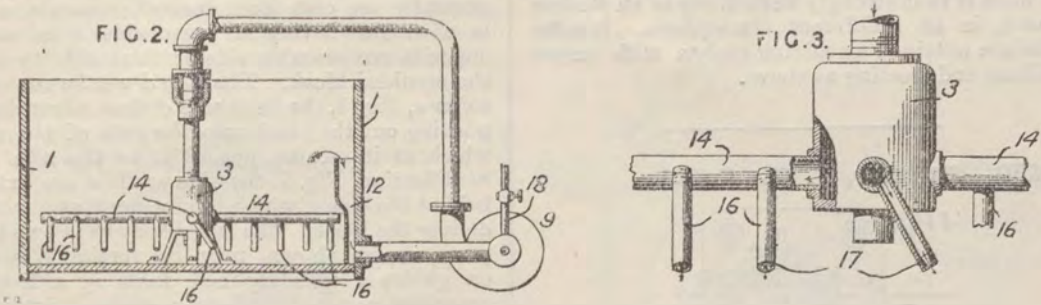
Fire-proof coverings and compositions.—Fire-proof partitions or ceiling slabs are composed of a mixture of about equal volumes of fire-clay, plaster of paris, and finely-divided cork.

20,865. Trent, L. C. Oct. 14.

Cements.—In apparatus for agitating, circulating, and aerating liquid slimes, clay, cement, slurry, sludge, &c., the material is withdrawn from the chamber 1, preferably through an overflow tank 12, by a pump 9, and returned by the rotatable receiver 3 to the radial arms 14, from which it is injected into the material by tangential pipes 16, the openings of which are restricted by plugs 17. Rotation is thus imparted to the receiver and arms, which are immersed in the material. Aeration is effected by admitting air to the pump by a pipe 18.

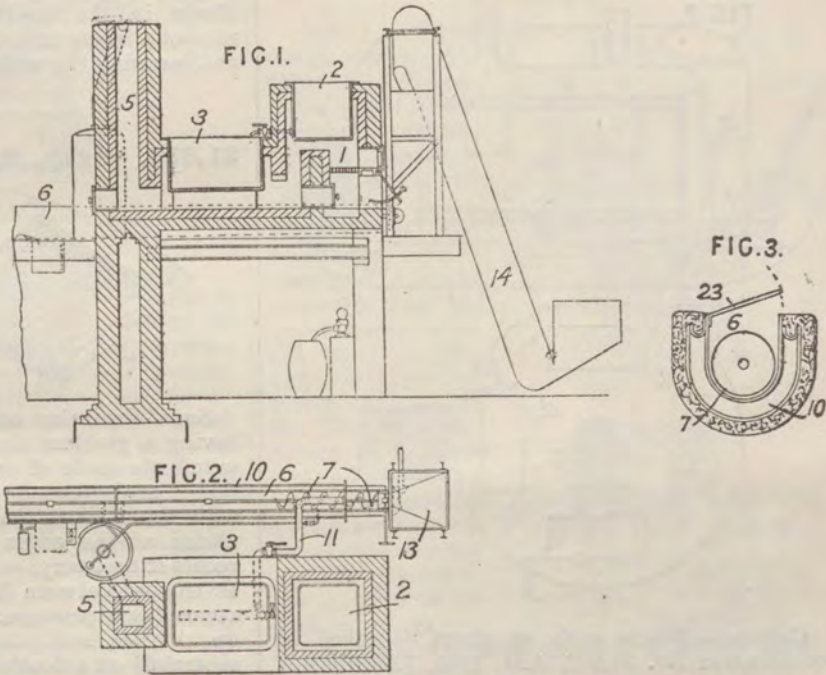
(For Figures see next page.)

20,865



20,953. Smart, J. Oct. 16.

Asphalts. — Apparatus for mixing separately-heated tar and stones for paving is shown in sectional elevation in Fig. 1 and in plan in Fig. 2. The tar is pumped into and heated in a tank 2 over a furnace 1, and is drawn off into a reservoir 3, under which the hot gases also pass to the chimney 5. By means of a pipe 11 having discharging-nipples, it is led to a trough 6, into which separately - heated stones are discharged by a hopper 13 from an elevator 14. Mixture is effected by a power-driven screw conveyor 7 mounted in the trough. The trough, Fig. 3, is kept hot by a lagged jacket 10 containing steam or furnace gases, and preferably has hinged inspection covers 23. It may be made in disconnectible lengths, so that, by the successive removal of the end sections, the mixture may be discharged in a series of separate heaps.



21,043. Hutchinson, J. Oct. 17.

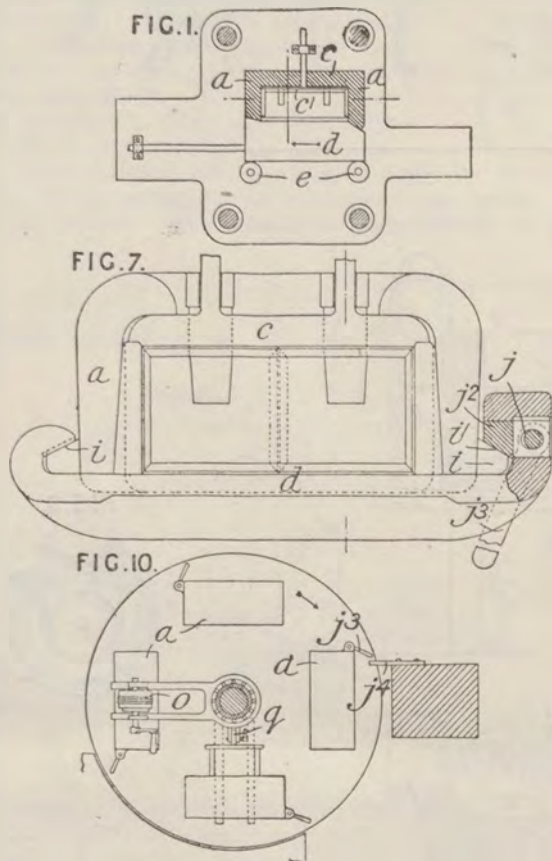
Asphalts.—Consists in means for applying tar, asphaltic residual oils, and malthas or other liquid asphalts to the surfaces of roads, footways, race-tracks, &c. for binding them and reducing dust. The tar is heated to about 176° F., and the other ingredients to about 200° F., and they are mixed in stated proportions in a steam-jacketed mixer with cindery materials, such as destructor or coke residues, clinker, breeze, &c., which have been previously sifted and heated. When the porous vehicle is saturated, it is sprinkled on the road surface and is worked in by rolling or by the ordinary traffic.

21,347. Bloxam, A. G., [Siemens & Co., Geb.]. Oct. 20.

Refractory substances.—In order to obtain bodies of high density and great hardness which are good conductors of electricity and resist high temperatures and chemical reagents, silicon carbide is mixed intimately with silicon and the mass is moulded to the desired form, say a rod or tube. An agglutinant may be added, preferably a volatile one such as glycerine, or one that will carbonize on heating. In some cases clay or boric acid may be used. In the case of boric acid, it may be dissolved in glycerine. When glycerine is used, the mass is

plastic and can be readily fashioned or squirted. The mass is then strongly heated, say in an electric furnace, in an indifferent atmosphere. Similar bodies are obtained by mixing carbon with excess of silicon and treating as above.

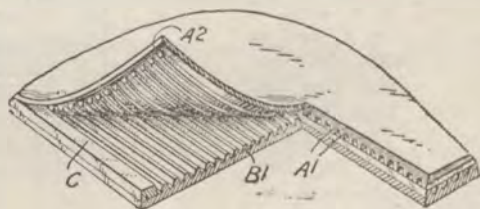
21,450. Stidder, J. G. Oct. 21.



Casting.—Blocks such as those described in Specification No. 21,902, A.D. 1903, [*Abridgment*

Class Moulding &c.], for paving or building generally are cast from cement, concrete, or clay in a mould having a removable side and an opposite reciprocable side or false side to deliver the moulded block. The side *d* can be run off the roller *e*, Fig. 1, the false side *c'* then advancing and pushing out the block into the path of the side *d*, which, as it returns, pushes it to the side. In a modification, Fig. 7, the side walls *a* are extended behind the side *c*, which is advanced as a whole to deliver the block. The side *d* may be in two hinged parts, or, as shown, may be vertically movable on guides *i* with inclined faces *i'*, a handle *j*³ operating a cam *j* to force a wedge *j*² against the guide. Or the walls *a* may be hinged near the top so that they can swing out after the side *c* has moved forward. Fig. 10 illustrates the use of moulds with vertically movable end walls. The stop *j*⁴ engages the handle *j*³, the cam *q* loosens the blocks in the moulds before delivery, and the ratchet *o* forms part of the mechanism for raising and lowering the walls *d*.

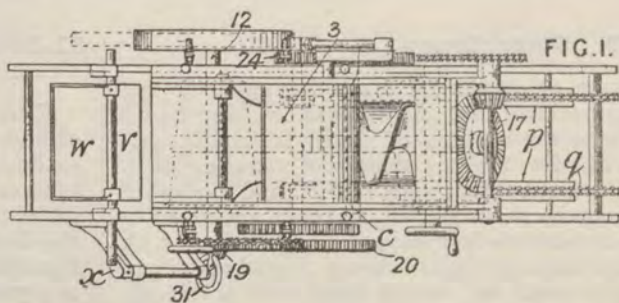
21,818. Gray, R. K. Oct. 26.



Sound-deadening coverings.—Mats and the like, having a yielding surface and serving to deaden sound, are made of two ribbed rubber sheets, the ribs or projections *A*¹ on one sheet making an angle with those *B*¹ on the other and the sheets being united at the edges *A*², *C*, and at intermediate points if necessary, to form air-tight joints. The air trapped between the projections may be above atmospheric pressure. The sheets may be made up as tiles, and attached to a backing or laid separately on a flooring.

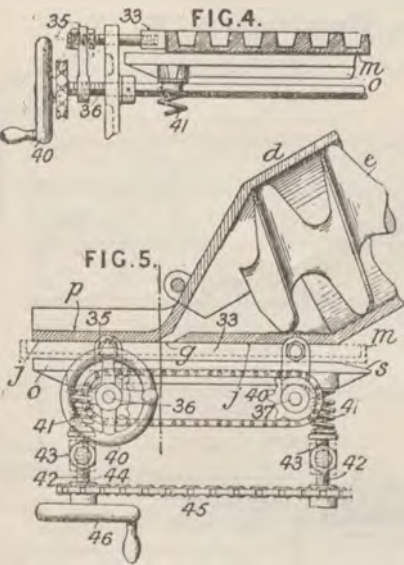
21,849. Carlson, G. Oct. 26.

Casting confectionery.—In forming chocolate blocks &c. from paste, the moulds are filled under pressure so that the paste used may contain a smaller amount of water than usual. The mould trays *m* are traversed along the slides *p* till, rising up the slope *s*, Fig. 5, they pass between the table *o* and the flat undersurface *j* of the casing *d* and its continuation *h*, and are guided between side rails *33*. The paste from the hopper *c*, forced down by the reciprocating wiper *3* on to the screw *e* to ensure a constant feed, is driven out through the sloping opening *g*, which spreads out



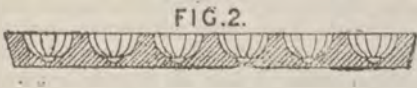
across the machine, into the moulds, the bearing-surface *j* retaining the material. An adjustable

scraper *v* strickles the surface of the moulds after they have come out from beneath the bearing-surfaces and the material, released from pressure, has risen slightly, the surplus material passing up



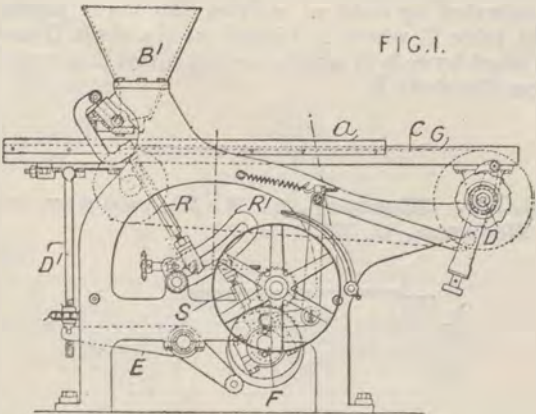
the scraper into a receptacle *w*. The scraper is oscillated from the main shaft 12 by means of bevel-gearing 31 and a crank *x*, and the feed-screw *e* is driven from the same shaft by means of reversed cone pulleys and a sprocket-chain and bevel-gearing 17, the reversed pulleys allowing the speed to be adjusted. The upward pressure of the table *o* and the width of the moulds used are varied as follows:—The table rests on four springs 41 and four screw spindles 42 held in bearings 43 and carrying sprockets 44 around which passes a chain 45. Rotation of the handle 46 on one spindle raises or depresses the four spindles. In the same way, rotation of the handle 40 moves the screw shafts 36, 37 in or out, and, through the arms 35, thus pulls out or presses in the side rails 33. The moulds are traversed by means of a snag on the sprocket-chain *q*, which is driven by spur-gearing 19, 20, 24, &c. from the shaft 12; the wiper or hopper wall 3 is reciprocated by means of a cam and crank connexions.

21,891. Wheeler, J. A. Oct. 27.

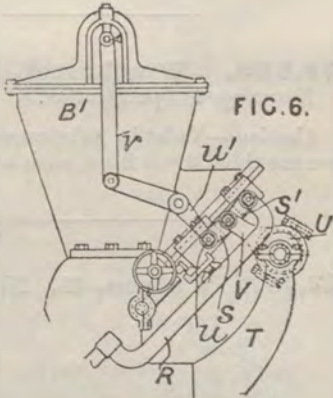
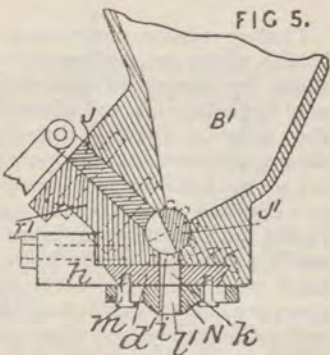


Casting confectionery.—Jellies, gums, and like sweetmeats are cast in isolated cavities in a tray having a surface of the nature of glazed earthenware. The Provisional Specification mentions stoneware, porcelain, and glass.

21,940. Copland, A. W. Oct. 27.



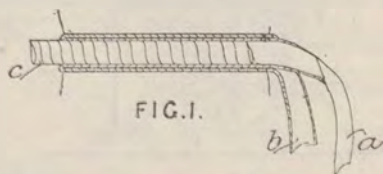
Casting.—Soft dough for sponge cakes and macaroons, melted fondants, chocolates, &c. is deposited from a hopper *B'* through a three-way valve *J'* and registering-apertures *i*, *k*, *l'* on to trays traversed between guides *a* on the top *C* on the intermittently-driven endless belt *G*. The valve *J'*, shown as a semi-cylinder, being turned to establish communication between the hopper and the cylinder *I'*, the piston *J* is retracted to move forward again and force out the material sucked in when the valve is turned, Fig. 5. The dovetailed bar *d'*, held by the clamping-bar *h*, has the plate *N* carrying the



nozzles *l'* slidably connected to it by screws *m*, so that, on a pinion on the valve shaft taking into a rack attached to the plate *N*, this is traversed in the same direction as the carrier to cut off the supply, lay any superfluous material over that already deposited, and prevent drip. The piston is driven from the shaft *F* through rods *R*, *S*, one end of the rod *R* being adjustable along a slotted bar *R'*. To express the material, an intermittently-operated piston can be employed, with or without a similarly-actuated presser-plate in the hopper. The piston is driven from the connecting-rod *R*, Fig. 6, through toggle-arms *s*, *s'*, the end of the piston being connected to the end of

the arms. A rotating shaft T carrying eccentrics V moves the toggles in and out. The presser-plate is actuated by links u^1 , v from the lower toggle. The table C, which is hinged on the shaft D, can be tilted by rods D¹ and bell-crank levers E operated from the shaft F.

22,039. Meersch, A. E. M. van der, and Baissac, C. M. Oct. 30.

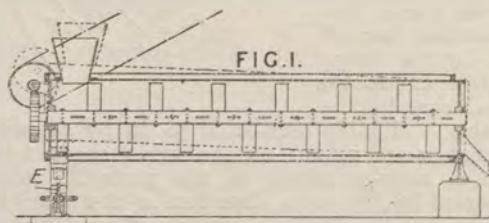


Casting cement, concrete, and like structures and blocks, slabs, &c., hollow or with passages through them, by means of removable cores. The cores may be collapsible and distended in position, where they may be doubled over by fluid pressure. As shown, they consist of rope c or rigid material, and are surrounded by lubricated tape or canvas strips a , b doubled upon themselves, so that they can be pulled out readily to leave the cores loose and easily removable in the holes. The strips may be used with the distensible cores. Sometimes the cores are drawn out before the strips are removed, and guide-pulleys are then provided to ensure the pull being exerted in the direction of their axes.

22,523. Winchester, B. T. Nov. 3.
Drawings to Specification.

Casting.—Volatile substances, such as menthol, are moulded upon fibre, such as raw cotton.

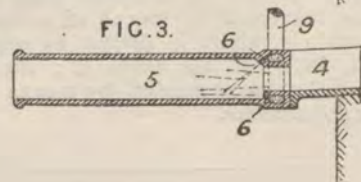
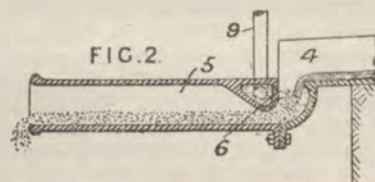
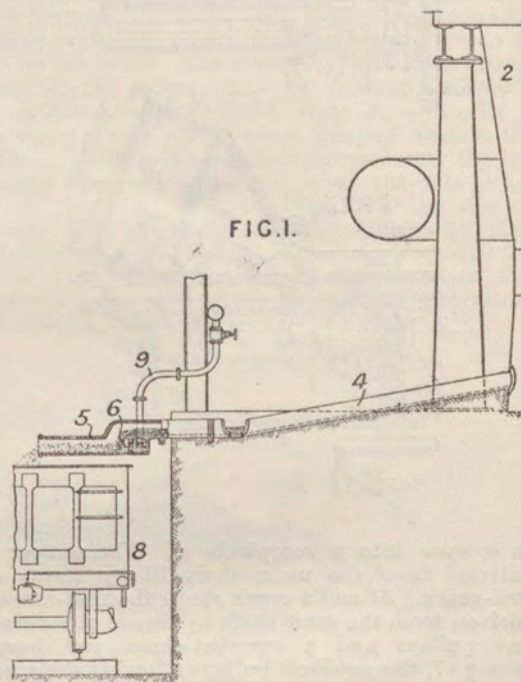
22,787. Watson, G. Nov. 7.



Cements.—In the manufacture of bricks from refuse-destroyer clinker and lime, the lime present in the clinker as well as the added lime are slaked so as to prevent bursting of the bricks when they are subjected to moisture. The mixing and slaking are carried on simultaneously in the machine shown in Fig. 1, which is fitted with revolving beaters. The beaters do not propel the material, the travel

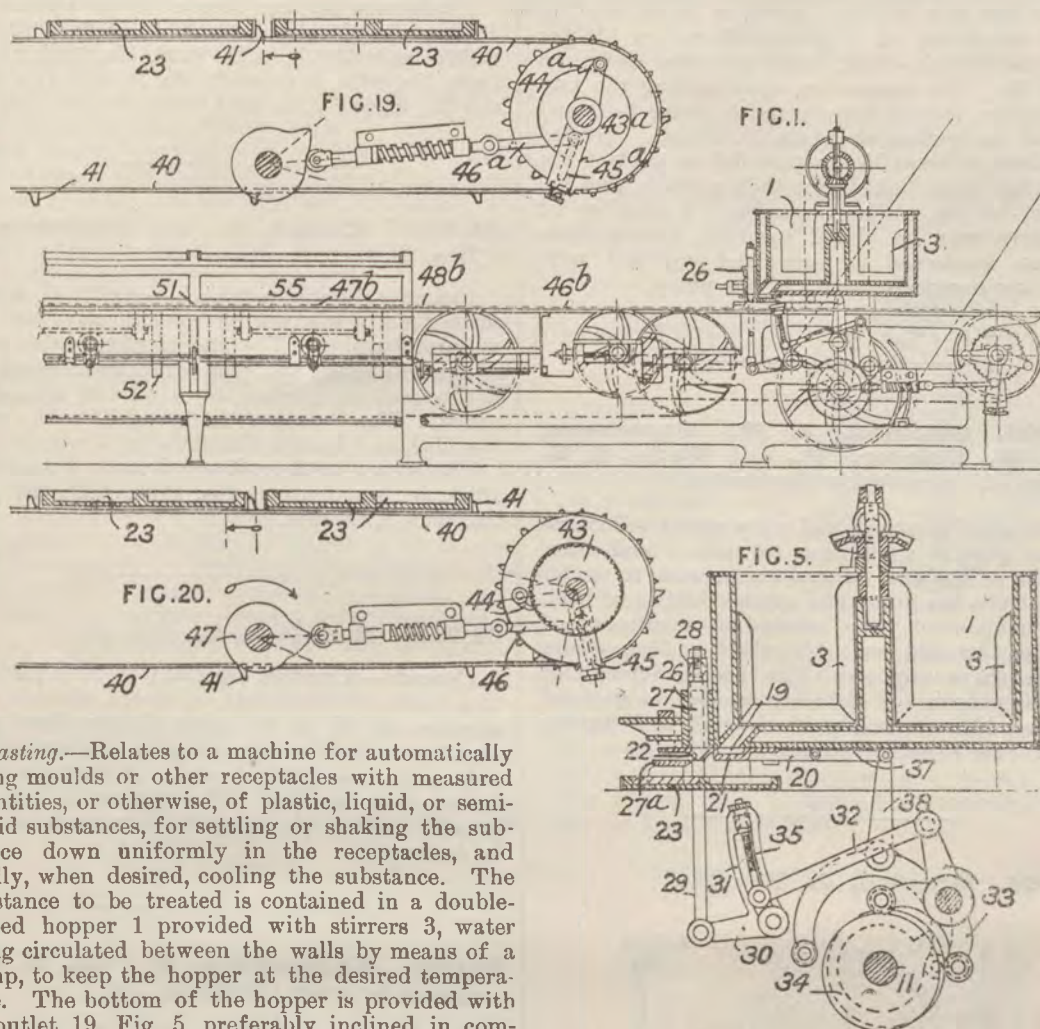
of which through the machine is caused and controlled by inclining the cylinder by means of screw gear E.

22,932. Hamfeldt, G. K. Nov. 8.



Slags, treatment of.—In disintegrating molten slag to obtain an artificial sand, the slag passes from the furnace 2, Fig. 1, by a trough 4 to an enclosed chamber or tube 5 supplied with water by a pipe 9 and inlets 6, the granulated slag being received in cars 8. The water inlets 6 may be arranged as shown in Fig. 2, or an annular opening 6, Fig. 3, may deliver the water in an annular sheet through which the slag flows.

23,233. Baker, G. S. Nov. 11.



Casting.—Relates to a machine for automatically filling moulds or other receptacles with measured quantities, or otherwise, of plastic, liquid, or semi-liquid substances, for settling or shaking the substance down uniformly in the receptacles, and finally, when desired, cooling the substance. The substance to be treated is contained in a double-walled hopper 1 provided with stirrers 3, water being circulated between the walls by means of a pump, to keep the hopper at the desired temperature. The bottom of the hopper is provided with an outlet 19, Fig. 5, preferably inclined, in communication with a reciprocating slide 20, formed with a pocket 21 and a nozzle 22. Adjacent to the hopper is a pump 26, which sucks the substance from the hopper when the pocket 21 registers with both the hopper and the pump, and discharges it through the nozzle into moulds 23, when, on the return movement of the slide, connexion between the hopper and the pump is shut off. For treating certain materials, a fixed knife 27a, Fig. 5, is provided to shut off the mouth of the nozzle. In a modification, the knife may be mounted on a rocking arm and operated by a cam; or it may be replaced by a fixed wire. A number of pumps and filling-nozzles are provided, the plungers 27 of the pumps being all bolted to a cross-head 28, reciprocated by rods 29, through a bell-crank lever 30, a rod 32, bell-crank lever 33, and cams 34 on the main shaft 11. One arm 31 of the lever 30 is slotted to receive the rod 32, the position of which may be adjusted by a screw 35 to vary the stroke of the pump, and so to regulate the quantity of material discharged. The slide 20 is operated by levers 37, 38 and cams on the main shaft. For dealing with materials of stiff consistency, the

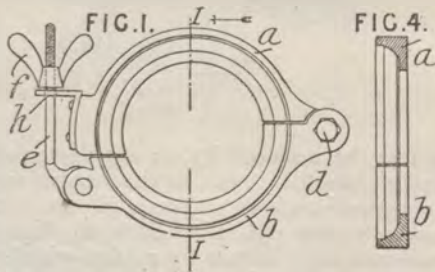
pump may be replaced by, or supplemented with, feed-rolls placed adjacent to the hopper outlet 19. The receptacles, shown as trays 23, are carried on endless conveyer chains or belts 40, Figs. 19 and 20, intermittently driven by ratchet-wheels 43 and pawls 44 operated through spring-controlled rods 46 and bell-crank levers 45 by cams 47 on the main shaft. Screw adjustments are provided in the levers 45 to regulate the feed. An auxiliary ratchet gear, Fig. 19, is provided for the gaps between the trays caused by the studs 41 in the conveyer chains, and so cause the receptacles to register properly with the filling-nozzles. The chains 40 deliver the receptacles on to belts 46, which convey them to a series of bands passing over tapping-tables adapted to settle or shake the materials compactly down in the receptacles. The bands may rest on, or be partly enclosed in, other leather bands, to deaden the shock of the tapping-tables. All the bands and chain-wheels are mounted on adjustable pulleys and bearings, respectively. The tapping-tables 47 comprise one or a series of wooden

or other surfaces, to which vertical or lateral vibrating or shogging motions are imparted. The tables may rest loosely on cams, or be mounted on fixed transverse or longitudinal springs 51, for instance of lance-wood, which are acted on by the cams 52. The receptacles, after leaving the tapping-tables, may be transferred to other belts and carried to cooling-chambers if desired. Glazed chambers or boxes 55 are provided to protect the materials from dust during their passage from the hopper to the cooling-chamber. A number of machines may be placed together, having their hoppers connected in series and provided with circulation water by means of one pump.

23,307. Coleman, J. M., Stevenson, A. W., Sclater, W., and Wade, C. E.
Nov. 13. *Drawings to Specification.*

Fire-proof coverings and compositions.—Consists in the general application to railway and other vehicles of a plastic mineral composition to render the vehicles fire-proof and non-conductive of heat. The composition may consist of a mixture of asbestos fibre and cement moulded under pressure to the shape required. The form adopted for panelling consists of slabs ornamented or grooved to resemble woodwork, if desired, and having overlapping edges for jointing.

24,088. Granich, J. Nov. 22.



Casting.—For running asphalt into joints of earthenware pipes, a mould made in two parts pivoted together is used. The parts *a, b*, pivoted at *d*, are adjustably secured at their other ends by a pivoted wire *e* and thumb-screw *f* engaging with a bifurcated bent piece *h*. Clay is placed round the mould, the inside being first oiled, and the asphalt is run in.

24,219. Gardeur, A. Nov. 23.

Stone, hardening; concretes.—Artificial stone, consisting of the known mixture of sand, lime, and slag cement or metallic scoria, is hardened by

subjecting it to the action of water at a high temperature under pressure.

[Reference has been directed under Patents Act, 1902, to Specifications No. 8142, A.D. 1893, Nos. 20,770 and 23,018, A.D. 1895, No. 12,368, A.D. 1896, No. 8226, A.D. 1898, No. 18,787, A.D. 1899, and No. 23,630, A.D. 1902.]

24,224. Klinge, A., and Schourup, C.
Nov. 23.

Concretes; stone, artificial.—Artificial stone is made from a mixture of cement, clay, and sand without burning. The clay is mixed with water, allowed to settle, and then carefully kneaded to a fine consistency; when dry, sand and cement are added. The mixture is kneaded with water, moulded, and dried in the air.

[Reference has been directed under Patents Act, 1902, to Specifications No. 1195, A.D. 1877, and No. 2629, A.D. 1881.]

24,244. Bonafede, C. Nov. 24.

Cements.—A mastic, especially suitable for insertion between the joints of floors, consists of a mixture of 75 to 85 parts of rye-flour paste together with 25 to 15 parts of a mixture of saw dust and finely-ground cork. A suitable disinfectant may be added. The mixture is kept cold in order that the elasticity of the mixture may not be destroyed.

24,655. Kalnowsky, T. Jan. 28, [date applied for under Patents Act, 1901].

Slags, treatment of.—Slag produced in the basic-steel process is introduced in a fluid condition into a closed container and sprinkled with water before it solidifies, the slag being disintegrated by the steam which is formed. The container is provided with a safety-valve for relieving any excess pressure.

24,925. Davies, R. Dec. 1. *Drawings to Specification.*

Fire-proof compositions.—A stoker's glove or mitten for protecting the hand from heat and injury is treated with a heat-resisting compound consisting of powdered asbestos or silica in a matrix of glue. Specification No. 27,025, A.D. 1902, [Abridgment Class Wearing-apparel], is referred to.

26,384. Bloxam, A. G., [*Siemens & Co., Geb.*]. Dec. 18.

Refractory substances.—Relates to the manufacture from silicon mixed with other substances and heated in an atmosphere of nitrogen of refractory and hard rods, tubes, disks, or the like of high electrical conductivity, suitable for grindstones, electric heaters, and the like. The substances mixed with the silicon may be carborundum, carbon, a metal, or the like, and, if desired, an agglutinant. Nitrogen is fixed by the silicon, forming silicon nitride, and, if carbon is one of the constituents, C_2Si_2N is produced.

26,539. Smith, R., and Atherton, H. Dec. 20.

Asphalts.—An artificial asphalt consists of a mixture of 5 parts sand or like substance used in the manufacture of asphalt, one part pitch, and one part tar. To whiten the surface, granite chippings or the like may be placed in it, in situ, and, according to the Provisional Specification, lime may be added for the purpose of hardening.

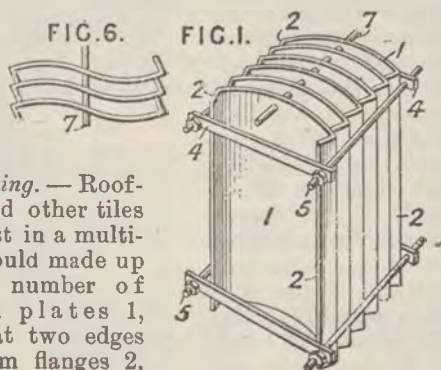
[Reference has been directed under Patents Act, 1902, to Specifications Nos. 520 and 3398, A.D. 1871.]

27,082. Angelis [*née Vecchi*], **G. de.** Dec. 28.

Refractory substances.—A non-conducting and

refractory material is composed of a mixture of magnesium carbonate, magnesium oxide, and cellulose, to which a mixture of raw alum, boric acid, water, and gelatin, starch, or casein is added. Wood or cork dust, and soot may be added.

27,190. Sawyer, F. M. Jan. 12, [*date applied for under Patents Act, 1901*].



Casting.—Roofing and other tiles are cast in a multiple mould made up of a number of curved plates 1, bent at two edges to form flanges 2, which form the side walls of the mould compartments. The plates are clamped together by means of bars 4, 5, and nail holes are formed in the tiles by means of a core-bar 7. The flanges 2 may also be formed by bending the edges of the plates 1 backwards, or may consist of separate pieces of metal soldered to the plates. Fig. 6 shows the construction of a mould for S-shaped tiles.

A.D. 1906.

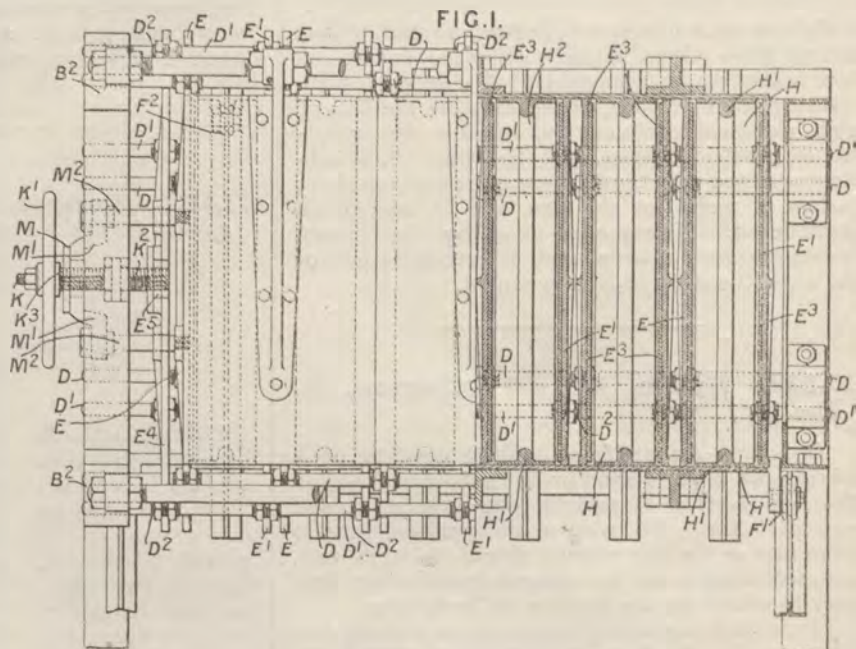
184. Brandram, A. G. Jan. 2. *Drawings to Specification.*

Asphalts.—In a clip and sleeve joint for sewer or like pipes, the ends of the tubes and the inside

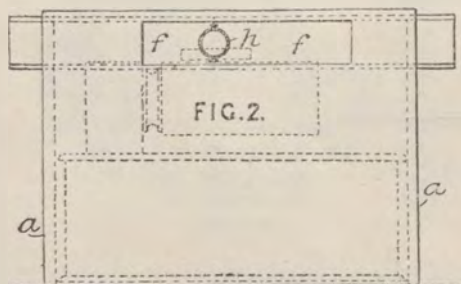
of the clip are coated with bitumen preferably mixed with about 20 per cent of asphalt oil.

371. Mitchison, G. C. Jan. 5.

Casting plaster, cement, or like blocks or slabs, particularly those described in Specification No. 17,029, A.D. 1903. The plates E , E^1 forming the sides of the moulds are moved from the moulded blocks in a direction normal to their surfaces. To ensure simultaneous and uniform motion and to obtain adjustability, the plates E are connected to the screwed part D^2 of rods D passing slidably through brackets B^2 at the ends of the frame. The plates E^1 are similarly connected to similar rods D^1 , to which is also connected a plate E^4 . The spindle K of the hand-wheel K^1 has right and left hand screwed parts K^2 , K^3 , the first part taking into a bushing M in a yoke M^1 , connected by bolts M^2 to one of the plates E , and the other taking into a bushing E^5 on the plate E^4 . In this way, rotation of the hand-wheel produces simultaneous and opposite motions of the sets of plates E , E^1 . By using facing-plates E^3 , blocks or



different patterns and thicknesses may be formed, and fillets H , H^1 , H^2 are provided to form the top, bottom, and ends of the blocks. The fillets H are supported on cross-bars carrying rollers F^2 , on which and rollers F^1 a frame runs to facilitate the removal of the finished blocks.

768. Welton, R. Jan. 11.

Sound-deadening coverings &c.—In order to eliminate the grating noise in phonographs, the whole machine is enclosed in a double-walled sound-proof box and a disk of felt or similar sound-deadening material is placed in the trumpet or "tone arm." In the case of a machine in which the trumpet h travels, a sliding panel f is arranged to close the cover a completely in all positions.

1102. Benjamin, F. Jan. 15.

Slags, treatment of.—A fertilizing-slag is obtained

in metal-refining processes by adding to the charge substances containing phosphoric acid. The substances may be added previous to, during, or after the process, and are carried over into the slag with the formation therein of a citrate-soluble phosphoric acid.

1611. Aeberli, H. Jan. 22.

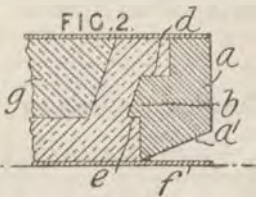
Asphalts.—Tar-gravel-sand macadam is made by arranging alternate layers of sand and hot tar-coated gravel in heaps and covering with dung or the like to retain the heat.

1635. Nay, J., and Revello, V. Jan. 22.

Cements.—A cement is composed of approximately equal weights of caoutchouc and white lead, rendered plastic or liquid by admixture of a rubber solvent and linseed oil.

2191A. Zwicker, J. G. Jan. 29.

Casting concrete slabs, such as those described in Specification No. 2191, A.D. 1906, [Abridgment Class Buildings &c.]. The sides *a* of the mould are undercut at *a'* so that they can turn on their lowest points and free the moulded article. As shown, the sides have inner projections *b* with unequal upper and lower faces *d, e* and a centre-piece *g* is used as a core, but the inner contour of the sides may be of any suitable shape and the core may be dispensed with. The mould rests on a base *f*, and by the use



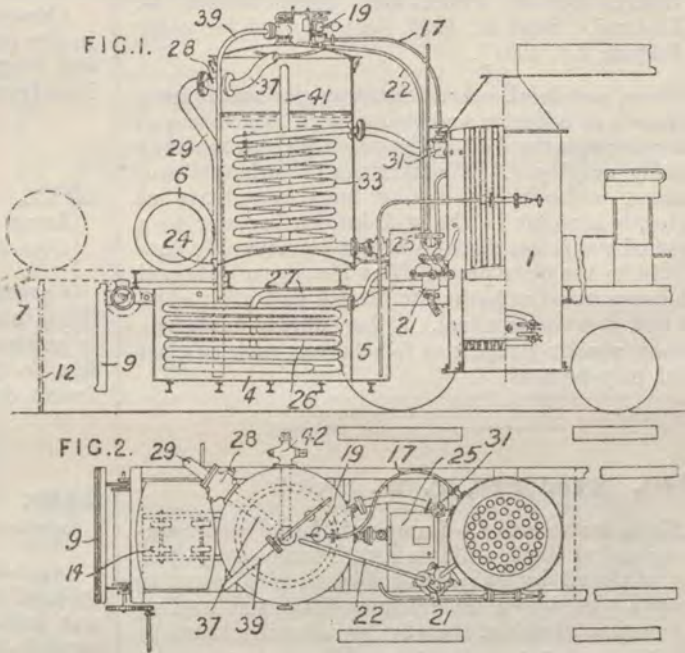
of several baseboards a stack of moulds can be made.

2207. Boulton, A. J., [Cöln-Müsener Bergwerks-Akt.-Verein]. Jan. 29.

Stone, hardening; slags, treatment of. — Slag, without admixture with lime as heretofore, is ground, mixed with water, moulded, and treated with carbonic acid, or gas mixtures containing it, under pressure, and is used for making artificial stone, blocks, tiles, and pipes. In order to convert into briquettes ores, dust from blast-furnace charges, and the like, these substances are mixed with finely-ground slag and treated as above described.

2451. Soc. Générale de Goudronnage des Routes. Feb. 22, 1905, [date applied for under Patents Act, 1901].

Asphalts.—Figs. 1 and 2 show an apparatus for heating tar which is subsequently spread on road surfaces by a separate machine. The heater is filled with steam from the boiler 1 by the pipe 17 and reducing-valve 19, and this steam is condensed by pumping cold water on the heater by a pump 21 and pipe 22, the resulting vacuum causing cold tar to be drawn from the reservoir 4 into the heater through the pipes 29, 37 and the cock 28, which is opened for this operation. The cock 31 is then open to pass steam through the heating-coil 33, raising the tar to its frothing-temperature, at which juncture the cock is closed again. Any overflow during the frothing passes down the pipe 37 to the reservoir, into which the safety-valve pipe 39 also discharges. The condensed steam passes into a tank 25 and thence, together with the cooling-water, which is collected in a gutter 24, through the pipe 27 to a coil 26, which gives the tar a preliminary heating. The water passes finally into a tank 5 for use as boiler feed. For distribution, the tar is forced through the pipe 41 and cock 42 into a separate sprinkler, by closing the cock 28



and admitting steam to the heater through the pipe 17.

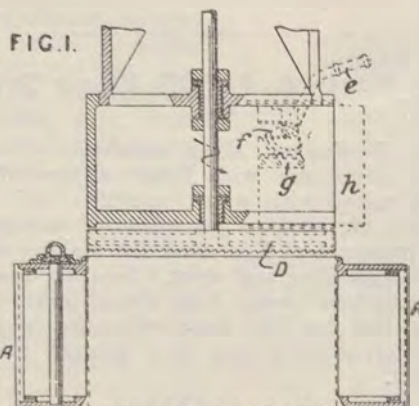
2859. Ahrberg, A. Feb. 6.

Casting. — Annular saws or scrapers are used for removing the excess of sugar from the central parts of the annular moulds or liners used in connexion with centrifugal machines. Fig. 1 shows a rotary saw *D* combined with an appliance for ejecting the plates of sugar from the cells of the mould *A*. The ejector consists of a plate *h* actuated by means of a lever *e*, toothed segment *f*,

and rack *g*. The saw is gradually introduced into the mould, or the mould is pressed against the saw by means of a ram. The mould may be raised on to a truck by means of a crane, the truck being afterwards moved along rails to a position over the ram. A stationary scraper or knife may be substituted for the saw.

(For Figure see next page.)

2859.



3182. Katz, B. Alexander-, [trading as Internationales Patent-und Maschinenenges. R. Lüders]. Sept. 22, 1905, [date applied for under Patents Act, 1901].

Stone, artificial.—Artificial stone is made from mixtures of asbestos and cement in a filter-press or filter-drum, instead of in the paper-making machine usually employed. The mixture of asbestos and cement, without the use of large quantities of water, is brought in the well-known manner to a state of the finest division and is immediately conducted to the filter-press. The blocks so obtained are compressed in hydraulic presses and allowed to set and harden as usual. Other fibrous materials having similar properties to asbestos, such as glass wool, may be used.

3240. Stoddart, F. W. Feb. 9.

Slags, treatment of.—Lumps of slag of an irregular spherical shape, suitable for filtering sewage &c., are obtained by subjecting molten slag running along a pipe to an intermittent blast and cooling the masses detached thereby by allowing them to fall into water or otherwise. The air enters the pipe near the exit end through a lateral opening communicating with a passage or chamber to which the air is supplied under pressure through a valve which is rapidly opened and closed.

3353. Sankey, C. H. Feb. 12.

Refractory substances; sound-deadening compositions.—Silica bricks, tiles, lumps, and the like are made from a mixture of calcined and finely-ground silica, ground coke, and a fibrous combustible material together with sodium silicate or other suitable flux. After being moulded they are dried and fired. The articles thus made are fire-proof, non-conducting, sound-resisting, and porous. They may be faced by dipping in fire-clay or neutral

material, such as graphite, carbon, carborundum, or the like, together, separately, or in combination with sodium silicate.

3353A. Sankey, C. H. Feb. 12.

Cements; refractory substances.—In the manufacture of silica cements, silica crucibles, and the like, a highly-absorbent material such as barley meal, infusorial earth, or the like is mixed with the silica in contradistinction to the use of chalk marl or fibrous combustible materials such as heath, hay, straw, chaff, coco-nut fibre, jute, bulrushes, wood fibre, wool, or hair. The use of infusorial silicate with a mixture of silica and clay is acknowledged to be known.

3655. Jeroch, W., and Deutsche Ferrit-Cement Ges. Sept. 28, 1905, [date applied for under Patents Act, 1901].

Cements.—A non-hygroscopic cement material in dry powdered form is made by mixing magnesia and magnesium sulphate, with or without a salt of lead free from chlorine, e.g. lead acetate.

3717. Forth and Clyde and Sunnyside Iron Companies, and Brown, J. Feb. 15. *Drawings to Specification.*

Cements.—The "cement" or backing which is filled into the spaces behind the tiles of a stove &c. is impoverished by admixture with sawdust or the like to prevent it from adhering to the tiles, tile frame, &c.

3749. Behmer, J. E. Nov. 23, 1905, [date applied for under Patents Act, 1901].

Asphalts.—A road surface material consists of natural or broken stones, to which is added without heat, either before or during laying, asphalt, asphalt-tar, asphalt-mastic, coal-tar, or a mixture of these or similar binders, with or without sand, cement, or the like, the whole being rammed by a power hammer to a state of homogeneity. A compound of the following composition is specified: broken stones 100 parts by volume, coal-tar or asphalt-tar 5 to 30 parts, and asphalt-mastic 1 to 10 parts, with a small quantity of cement.

3970. Lukacs, L. Feb. 17.

Stone, artificial and imitation.—In the manufacture of artificial stone from asbestos and cement or like materials, the fibrous and cementitious materials are separately fed in the form of sludge on to an endless band so as to form alternate layers. For this purpose, a number of receptacles containing

alternately cement sludge and asbestos sludge are arranged beneath an endless felt band and provided with rotating drums or the like to convey the sludge to the band. The two outer layers preferably consist of cement, and the slabs may be strengthened by metal or fabric between the layers. The edges of the slabs are rounded in order to prevent the water from creeping up at the edges of the slabs, and to give a neater appearance.

4503. Johnson, J. Y., [Koepp & Co., R.]. Feb. 23.

Cements.—Stucco is manufactured from chemically precipitated and burnt gypsum by converting the fine particles into coarser ones, e.g. in a ball,

stamp, or other suitable mill, and treating with liquid.

5169. Laureau, J. H. March 2.

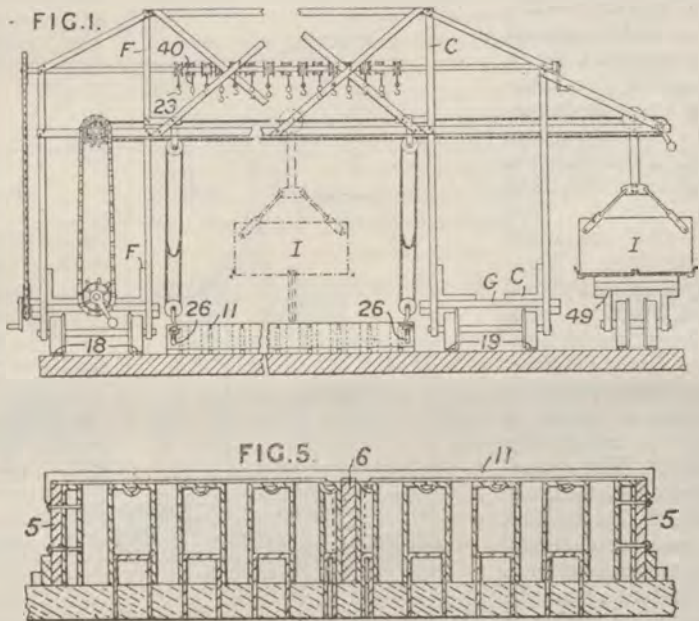
Fire-proof compositions.—Fucous extract solution, obtained from marine plants by a specified process, is treated with aluminium or other metallic salts so as to produce compounds applicable for fire-proofing cements and constructional materials.

5437. Klobukowski, W. P. March 6.
Drawings to Specification.

Cements.—Joints between stove-plates are filled with a cement composed of fire-clay, burnt argil, and asbestos wool, mixed to a thick paste with water.

5659. Willis, P. R. J., [Forbes, A. A.]. March 8.

Casting concretes &c. Blocks are made in moulds which can be easily disassembled so that parts can be used again, a series of moulds being used in the machine, which comprises a travelling frame C, carried on trucks F, G running on rails 18, 19 at the sides of the moulds. The moulds comprise sides 5, a longitudinal division wall 6, and transverse partitions arranged in pairs with clamps 11, fitting over the sides and centre wall, between them. When the material, which is run in a box I from an outer truck 49, and dumped into the moulds, has been tamped and levelled and the clamps 11 have been removed, hooks 26 on the sides 5 are engaged and the sides lifted, and sets of hooks 23, 40 are also brought down to engage hooks or the like in the transverse partition and cores, and these are also lifted, the travel of the frame allowing them to be used for a fresh lot of moulds while the material first moulded is setting. In a modification, the sides are removed by hand.



5671. Becker, F. H. March 8.

Stone, artificial.—Building-blocks and the like are manufactured from ashes obtained from burnt refuse bound together by molten glass. The ashes are sifted, and the pieces of glass, porcelain, slag, bone, metal, &c. separated are finely ground, the glass separately. The latter is added in the proportion of, say, 25 to 50 per cent to the mixture of ashes and ground porcelain &c., and the mass is moistened with water, moulded, dried, and heated to melt the glass.

5779. Young, E., and Batten, G. B. March 9.

Asphalts for roads, paths, tennis courts, &c. consist of Nigerian bitumen or asphalt, together with any or all of the following materials, namely: pulverized chalk or limestone; pitch (preferably gas pitch); Roman, Portland, or like cement; a flux, such as tar, heavy petroleum, terebine, turpentine, or naphtha. Broken stone may also be added, and a tapping of finely-broken stone, gravel, shell, sand, &c. may be applied. Two suitable

compositions are as follows: (a) 1 part of Nigerian bitumen, 1 of chalk or limestone, $\frac{1}{2}$ of Portland or Roman cement, $\frac{1}{4}$ of pitch (gas or Trinidad), and 2 of broken granite; (b) 1 part of Nigerian bitumen, 1 of asphalt, 1 of Roman or Portland cement, $\frac{1}{2}$ of pitch (Trinidad or gas), and $2\frac{1}{2}$ of broken granite or flint. Mixtures containing Nigerian bitumen are also used for laying dust. The bitumen may be heated with tar, or a mixture of tar and petroleum.

5947. Stratton, J., Claremont, E. A., Beaver, C. J., and Tanner, A. E. March 12.

Casting.—Conduits are made of sheet iron embedded in plastic asphalt and bent into shape by passing the compound sheet through a series of rollers. The compound sheet is made by running the asphalt from two separate spouts on to a travelling table carrying perforated sheets of iron.

5955. Klee, H. Nov. 13, 1905, [date applied for under Patents Act, 1901].

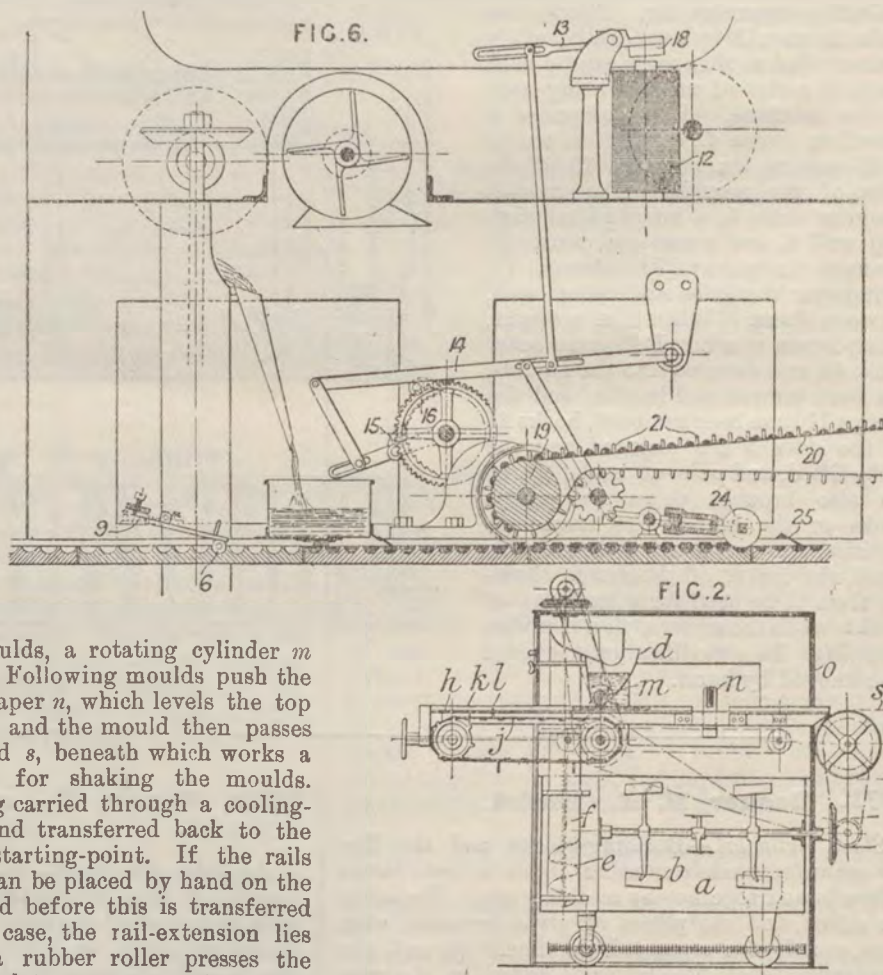
Stone, artificial.—In the manufacture of plates from fibrous materials and an hydraulic binder, e.g. from asbestos and cement, the binder is supplied to the fibre after pulping and while it is still on the perforated drum or longitudinal sieve of the cardboard or like machine, i.e. before the application of the couching-boards. This process ensures a thorough mixing.

6034. Neal, A. W. March 13.

Cements; stone, artificial.—A distemper paint for producing a stone-like surface, applicable also as an ingredient in artificial stone or stucco-work, consists of chalk, sand, mica, and alum or silica, mixed with a liquid obtained by heating together oil or oil varnish, turpentine, size, and water.

6087. Savy, A. H. March 13.

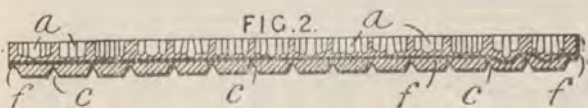
Casting.—Relates to the general arrangement of a machine for making plain or cream-filled chocolates and also to the particular details of one part. The mould trays are taken from a heating-oven and placed at *h*, Fig. 2, on rails *k*, lugs *l* on an endless chain *j* bringing them into the cage *o*, which is kept constantly heated. The chocolate in the tank *a* is stirred by beaters *b* and transferred by a worm *f* in a cylinder *e* to the hopper *d*, whence it passes into the moulds, a rotating cylinder *m* assisting the passage. Following moulds push the filled mould past a scraper *n*, which levels the top and strickles the sides, and the mould then passes on to an endless band *s*, beneath which works a tappet-actuated frame for shaking the moulds. The mould, after being carried through a cooling-chamber, is emptied and transferred back to the heating-oven at the starting-point. If the rails are extended, creams can be placed by hand on the chocolates in the mould before this is transferred to the belt *s*. In this case, the rail-extension lies over a heated box, a rubber roller presses the creams into the chocolates, a scraper turns the chocolate, now in excess, over the creams to enclose them, and surplus material is also scraped off to be carried back to the tank *a*. In another modification, Fig. 6, the creams are placed on the



chocolate automatically. As the moulds move to the right, a light roller 6 following the undulations of the moulds causes an electric circuit to be made and broken at 9. An electro-magnet 12,

being thus intermittently energized, attracts and looses in like manner its armature 18, and by means of the slotted adjustable arms 13, 14 operates the pawl 15 and ratchet 16, which rotate the drum 19 step by step. The creams are placed between partitions 21 on a band 20 passing around the drum, and, being retained by a circular guard where the band flexes, are deposited on the chocolates. A roller 24 on a pivoted arm forces them in, and a scraper 25 folds the chocolate over as before described.

6275. Horn, A. March 15.



Casting confectionery. The flexible india-rubber mats used in casting chocolates &c. are strengthened by having a layer *f* of canvas, linen, wire-gauze, leather, or the like inserted between the bottoms of the moulds *a* and of the recesses *c* formed in the back face to allow flexure. The material may be inserted in strips, and, where necessary, may undulate.

6445. McKerrow, C. A., Hart, W. B., and Mallandain, W. S. March 17.

Sound-deadening coverings and compositions.—Packings and pads for use as sound insulators in railway coaches, motor-cars, trams and other vehicles, permanent-way chairs, engine and other foundations, &c. are composed of layers of felt or cloth, waterproofed throughout, coated with cement or other adhesive material, and arranged alternately with layers of a cushioning-substance, so that a partial reflexion of the sound waves is obtained at the junctions between the different media. The cushioning-substance may be cork, cork powder, ground rubber waste, ground rubber substitutes made from oils, india-rubber sheets, sawdust, mineral substances, &c., and the felts or cloths may be woollen felts, cotton or woollen cloths, or composite cloths consisting of wool, cotton, hemp, flax, wood fibres consisting largely of cellulose, hair, or mixtures of any of these, with or without a filling or

weighting substance. The built-up pads are pressed to the required size and dried.

6601. Blass, G. March 19.

Asphalts.—Oil, fat, grease, tar, resin, wax, pitch, asphalt, soap, and the like are solidified or increased in consistency by the addition of crude or purified anthracene or its homologues in place of the naphthalene previously employed for this purpose. The substances thus treated are retained between the crystals of the anthracene and preserve their individual characteristics. The products may be used as lubricants, insulating-compositions, &c. The following examples are given: (1) anthracene, wool-grease acid or sebacic acid, oil, and lime are melted together and allowed to cool; (2) a mass of anthracene is allowed to absorb ten per cent of castor oil.

6918. Popp, L., and Weisheit, G. March 22.

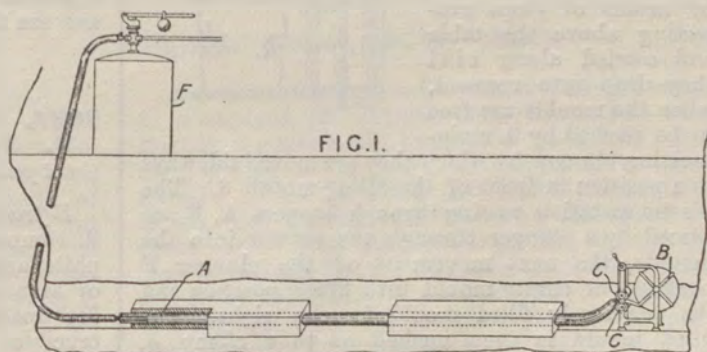
Stone, artificial &c.—In the manufacture of tiles, slabs, &c. from asbestos pulp or similar fibrous material, and hydraulic cement or binding-substances on cardboard machines, the cement is sprinkled or fed uniformly into the supply vat and mixed with the pulp, and the mixture is brought at once from the perforated drum to the felt band and removing-roll, so that the whole binding force or setting quality of the cement is utilized. The sheet is afterwards cut into slabs &c., which are pressed and dried.

6950. Leclaire, C. G. March 22, 1905, [date applied for under Patents Act, 1901].
Drawings to Specification. No Patent granted (Sealing fee not paid).

Cements.—A washing or drying fluid is circulated through solid material which is being discharged through a pipe from a filter or strainer. The arrangement is stated to be applicable in the manufacture of cement. The Specification in its original form as published under the Act of 1901 describes an arrangement in which the outlet pipe is flattened and perforated so that the washing or drying fluid may pass across it. This subject-matter does not occur in the Complete Specification as accepted.

7400. Hutchinson, C. T. March 27.

Casting.—Conduits for electric conductors formed by moulding a plastic material over an inflated core, as described in Specification No. 18,249, A.D. 1903, [Abridgment Class Electricity, Conducting &c.], are made continuous and not in sections by laying a flexible pipe such as *A* in the bottom of a trench, the operation being conveniently carried out by winding the tube from a reel *B* through clamping-rollers *C*; the pipe is then inflated with compressed air or other fluid



from the reservoir F, and cement or other plastic material is poured over the inflated tube as a core and moulded to any desired external shape. The flexible tube may be removed after the material has set, or may be left in to form a lining, and, in certain cases, a plastic coating may be first given to the tube so as to form a smooth lining to the conduit.

7443. Zulkowski, K. March 28.

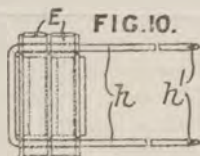
Slags, treatment of.—Slag cement is made by the addition of calcareous matter to superheated slag, preferably in a Martin furnace, instead of to merely molten slag as heretofore. When the calcareous matter is completely dissolved, the product is rapidly cooled. The superheated state is reached when all sulphides have been oxidized as ascertained by an acid test. Fluxes, such as fluor-spar, boracite, and the like, may be added to the mixture.

7572. Lines, E. March 29.

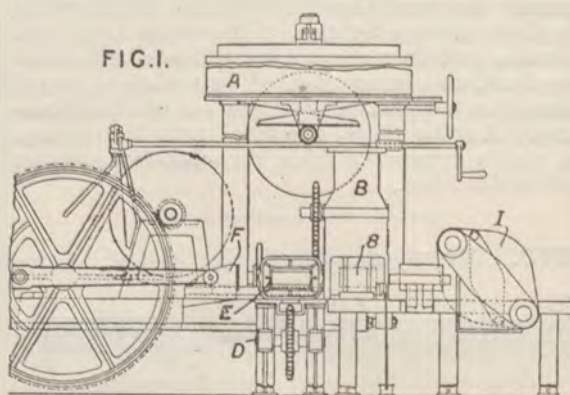
Stone, natural, preserving; asphalts.—To reduce the effects of air and moisture on roads made of Kentish rag, blue stone, cold-blast slag, or similar macadamizing-material, the stones are dried and heated and impregnated under pressure with petroleum or a mixture of petroleum and tar in stated proportions. The drying may be carried out on a rotating platform at a temperature of 150–200° F., and the impregnation in a hermetically-closed iron vessel adapted to discharge directly into trucks. A pressure of about 200–150 lb. per sq. in. is used. The tar and petroleum may be mixed independently at about 112° F. before being added to the stones.

7852. Hughes, C. M. C., Quinlan, T. H., and Middleton, R. April 2.

Casting.—Moulds E are moved along on a table D by means of stops projecting above the table and carried along till they drop into recesses, when the moulds are free to be pushed by a reciprocating plunger by which they are moved sideways to a position in front of the filling-mouth 8. The plastic materials passing through hoppers A, B are forced by a plunger through the mouth into the moulds, the next movement of the plunger F pushing an empty mould into filling position and the previously filled mould to the right. The filled mould is then pushed on to a clamp h, Fig. 10, on which the moulds are collected, then

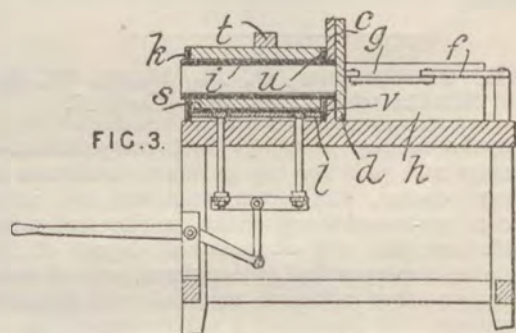


transferred to an hydraulic press I, which compresses the materials till they can be held firmly by



catches passed through the eyes h^1 , when they are taken away and allowed to set.

7883. Ketelsen, N. April 2.



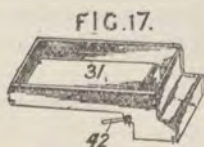
Casting drain pipes. Cores i are carried on a plate d , moved between guides h by links f, g . The cores pass through holes in a fixed plate c ; other plates k form the ends of the moulds, and the bottoms are formed by suitably-shaped members l , lined with loose sheet-metal carrier plates s . The cores being placed in position, clay or concrete is put in the enclosed half-mould and then round the upper part of the core. A templet t then strickles the top, and, being shaped to pass over the plates k, u , produces sharp-edged pipes. Forks v , passing through the members l , raise the plates s and the finished pipes.

8627. Crowley, R. J., and FitzPayne, F. April 10. *No Patent granted (Sealing fee not paid).*

Refractory substances; fire-proof compositions.—A composition of finely-ground corundum, graphite, and sodium silicate is used for fire-proofing, or as a cement for coating brickwork and metal, for roads and floors, for lining furnaces and crucibles, and the like. After application, it is burnt.

8861. Thomas, A. O. April 12.

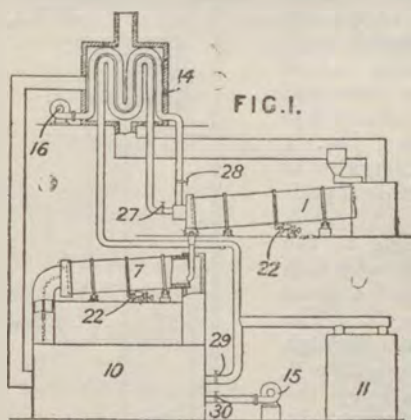
Casting.—A mould in which are cast right-angled or oblique Z-shaped concrete blocks for walls, consists of a correspondingly-shaped base 31 with lugs receiving a bolt 42 or U-shaped clamp which secures the sides; the ends are tenoned to the sides. Specifications No. 1324, A.D. 1856, No. 4648, A.D. 1877, and No. 2416, A.D. 1896, [*Abridgment Class Buildings &c.*], are referred to.

**9785. Berglund, S. W.** April 26.

Concretes; stone, artificial, hardening. In making bricks of calcareous sand or the like, the mixed materials, consisting, for example, of lime and sand, are reduced to a state of mud with water and allowed to settle in moulds, and are then hardened, while still immersed, by exposure to the action of water at temperatures exceeding 100° C.

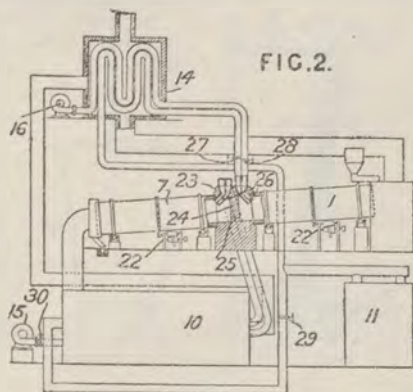
9906. Stowell, E. R. April 27.

Refractory substances.—Fire-proof refractory bricks are composed of a mixture of amorphous carborundum and ten to fifteen per cent of Portland cement.

10,091. Eldred, B. E. April 30.

Cements.—The process and apparatus for burning cement in separate calcining and clinkering rotary kilns are improved by the provision of (1) special regenerating means, and (2) means for regulating the temperature, flame conditions, and rate of feed independently for the two kilns. Two forms of plant are shown in Figs. 1 and 2. The calcining-kiln 1 and the clinkering-kiln 7 are heated by gaseous fuel, supplied from the producer 11, which, together with air supplied from the

blowers 16, 15, has passed through the regenerating-stove 14 and the regenerator 10, respectively. The products of combustion from the kiln 1 are passed through its regenerating-stove 14, and those



from the kiln 7 first through its own regenerator 10 and then through the regenerating-stove 14. The temperature and flame conditions may be regulated by means of the valves 27, 28, 29, 30, and the rate of feed by means of the conical pulleys 22. The adjacent ends of the kilns shown in Fig. 2 rotate in a housing 23, provided with a partition 24 having an opening 25 at the bottom for the transfer of material, and with burners 26 for the two kilns.

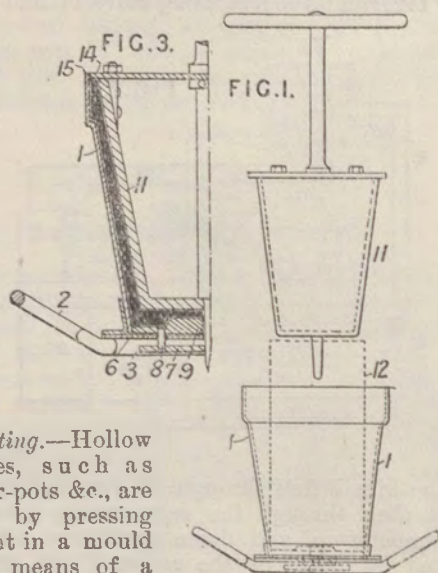
10,161. Hartenstein, H. L. May 1.

Refractory substances.—Bricks and the like for lining electric or other furnaces are made of coke and lime with a stated small proportion of a mixture of asbestos and pitch, tar, or resin. Finely-pulverized coke is mixed with cream of lime, and the asbestos mixture, which has been mixed in the dry state, is thoroughly kneaded in. The slightly moist mass is moulded into bricks, blocks, &c., which may be dried, and, if required for shipment, heated to 800–900° F. For applying the bricks to the inside of the furnace, a composition is used of lime, asbestos, and pitch, tar, or resin. The lining is non-conductive to electricity and heat.

10,244. Shott, W. N. May 2.

Asphalts.—Paving-blocks, tiles, or slabs are made of a mixture of crushed stone which will pass through a $\frac{1}{4}$ -inch mesh, granulated wood, fine stone dust, and asphalt or other bituminous or resinous cement. The materials are heated separately, mixed, and pressed into blocks or laid down in sheet form. The proportions of the ingredients vary according to the climatic conditions under which the material is to be used, and, in the Provisional Specification, it is stated that the proportions also vary according to the nature of the stone used.

10,393. Geraedts, C., Blocks, A., and Byvoet, W. May 3.



Casting.—Hollow articles, such as flower-pots &c., are made by pressing cement in a mould 1 by means of a core 11. The mould 1 is provided with a perforated base-plate 6 upon which rests a heavy disk 9 connected by means of bolts 8 to a plate 7. A cylinder 12 is inserted in the mould 1 and the space between cylinder and mould filled in with cement, the cylinder being then removed and the core 11 inserted and twisted downwards until the cover 14 comes level with the rim 15. The article is removed from the mould by withdrawing the core 11 and inverting the mould, the disk 9 pressing the article out of the mould. The mould 1 is supported by feet 3 which are formed into handles 2.

10,900. Cohen, E. S. All. May 9.

Stone, artificial and imitation.—Relates to a process for making artificial-stone compositions of the type in which inert materials are bound together by means of oxychloride cements. A mixture of magnesite and zinc oxide or carbonate is calcined and immediately mixed with a filler such as partly calcined marble dust, magnesium silicate, alumina, kaolin, flint, siliceous slag, powdered glass, porcelain, or the like. A solution of magnesium chloride to which some pure silicic acid has preferably been added is then mixed with the material. Fibrous substances may be employed as the filling-materials, and colouring-matter may be added. For producing large blocks, a skeleton of galvanized iron may be used.

11,086. Spittler, W. May 11.

Fire-proof coverings and compositions.—A fire-proof composition for sound-deadening consists of a mixture of coarse particles of wood or similar

material with a binding-material such as magnesium chloride and oxide.

[Reference has been directed under Patents Act, 1902, to Specification No. 11,259, A.D. 1891.]

11,351. Schäfer, C. May 15.

Fire-proof coverings.—Wire netting is covered with a mixture of chalk and honey, with or without glue, for the manufacture of fire-proof theatre decorations.

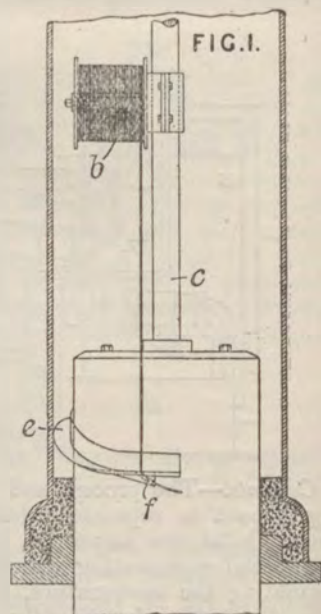
11,523. Edmunds, E. W., Goodall, A. A., Jones, W., Lupton, H., and Lupton, W. May 17.

Asphalts.—A composition for applying to the surface of roads, paths, and railway and like platforms, or for road making or repairing when mixed with stones or the like, consists of common salt, saltpetre, or chlorides mixed with coal or other tar, and asphalt or other bituminous substance.

[Reference has been directed under Patents Act, 1902, to Specifications No. 1783, A.D. 1871. No. 2743, A.D. 1881, [Abridgment Class Roads &c.], No. 975, A.D. 1882, No. 7270, A.D. 1892, No. 18,904, A.D. 1904, [Abridgment Class Roads &c.], and No. 18,524, A.D. 1905.]

11,835. Kilburn, B. E. D., [Skanska Cementgjuteriet Co.]. May 21.

Casting.—Concrete pipes are reinforced by a continuous helical band or wire laid in the tube as it is formed. Fig. 1 shows apparatus as described in Specification No. 18,353, A.D. 1899, to the spindle *c* of which is attached a spool of wire *b*. The wire is led through a guiding-tube *f*, carried by the helical blade *e*. In a modified form, the reel is carried inside the drum and the wire is led out through a hole in its wall.



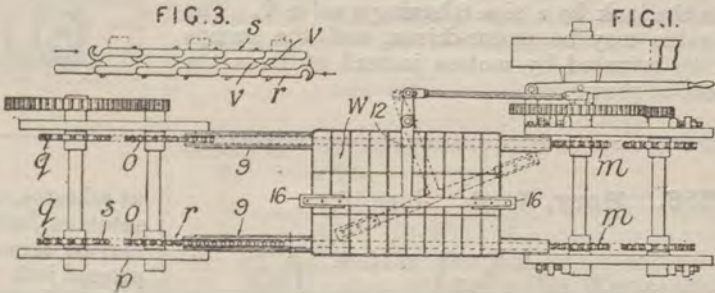
12,353. Bougleux, E. May 28.

Cements.—In order to render cement proof against sea-water, a quantity of puzzuolana, trass, gaize, or like material is added to neutralize any free lime and gypsum which might otherwise be present in the finished cement. For this purpose,

the cement materials and puzzuolana are analysed and a sufficient quantity of the latter is added to bring the silica, alumina, and iron oxide in the unburnt cement up to 23 to 24 per cent. The puzzuolana may be added at any stage of the manufacture, or it may be added to the finished cement.

12,403. Carlson, G. May 28.

Casting confectionery. Relates to a machine for shaking confectionery material into moulds and for brushing the surface of the confections during the shaking. Trays *w*, carrying the moulds charged with confectionery material, are carried by conveyer chains *s* passing round sprocket-wheels *p*, *q*, and travelling immediately above, and in a direction opposite to, chains *r* which pass around sprocket-wheels *m*, *o*. The chains *s* are formed with projections *v*, Fig. 3, which ride over projections *v* on the chain *r* and impart a shaking movement to the trays. The chains are supported



by channel-irons 9 on the frame of the machine. Brushes 16, carried by an arm 12, are swung across the trays during their passage through the machine.

12,621. Schumacher, W. May 30.

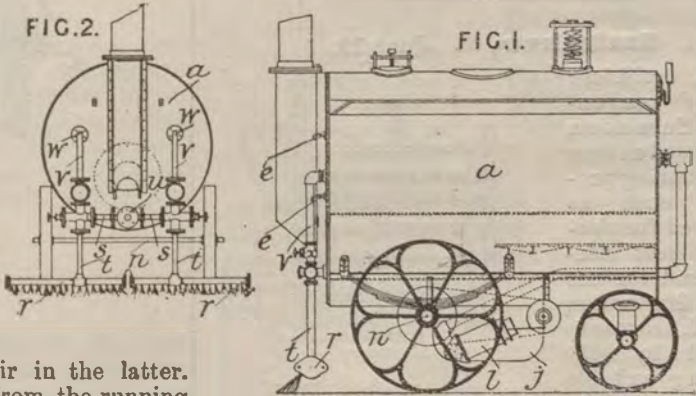
Stone, artificial; concretes.—The binding power of basic calcium silicates, such as Portland cement or blast-furnace slag, is increased by adding quartz ground to a fineness comparable with that of cement and by subjecting the blocks formed to the action of high-pressure steam. Other substances, such as lime, gypsum, asphalt, stearin, or the like may also be added. Specification No. 28,019, A.D. 1904, [Abridgment Class Iron &c.], is referred to.

13,232. South, J. T., Payne, G., and Payne, E. G. June 8.

Cements.—A cement is composed of Portland cement, sand, chalk, breeze or ashes, naphthalene, and certain metallic salts, namely, sodium sulphate, zinc sulphate, and alum. Sodium hyposulphite or carbonate may be used instead of the sulphate or the sulphates, or all the metallic salts may be omitted.

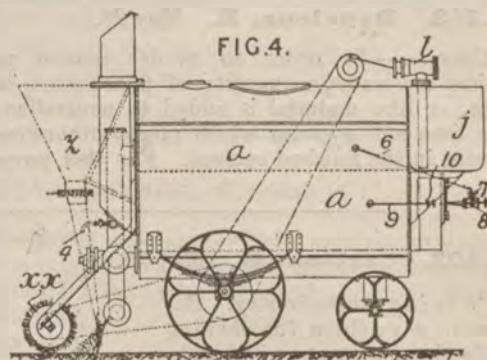
13,551. Thwaite, B. H. June 13.

Asphalts.—Consists of apparatus for melting and heating pitch, tar, or other hydrocarbons and distributing the same under pressure on road surfaces. The wheeled tank *a*, Figs. 1 and 2, which is preferably of the form shown in Specification No. 17,582, A.D. 1901, carries pumps *l* for forcing the hydrocarbons from the reservoir *j* into the tank and for compressing air in the latter. The pumps are normally driven from the running wheel *n*, but a clutch allows them to be disconnected and worked manually. The discharge is made from one or two spray pipes *r*, the supply to which takes place through pipes *t*, which are tapped

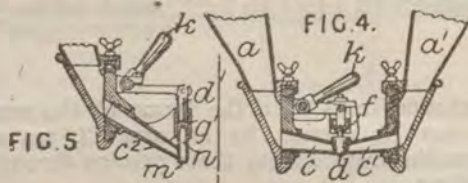


at *s* to the tar &c. supply pipe *u* and have extensions *v* entering the tank at points *w* above the level of the liquid, which may be ascertained by means of

pet cocks *e*. The pipe *u* may be fitted with a valve for direct discharge, and the pipes *v* have easily disconnectible flanges for the introduction of a heated rod &c. to clear them in the event of their becoming filled with solid hydrocarbon. In alternative forms, the reservoir *j* is placed saddlewise on the tank, and the air supply is taken directly from the pumps to the discharge pipes. Part of the hydrocarbons may be tapped off by a pipe 9, Fig. 4, and valve 10 for feeding the furnace. The fuel ejector 8 is connected with the compressed air in the tank by a pipe 6 having a valve 7. The apparatus may be motor-driven, and the pumps may be actuated by motors instead of from the wheels, as shown.



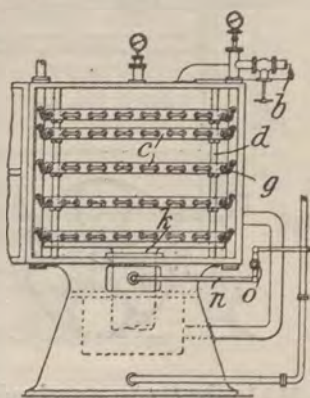
13,856. Berg, L. A. June 16.



Casting confectionery. Relates to depositing-machines. The nozzles *c*, through which the material is discharged from the hopper *a*, lie approximately horizontal and are cut off obliquely at their ends, thus forming oval openings into which fit conical stoppers *d* attached to a bar *f* operated through suitable connexions by a handle *k*. As shown in Fig. 4, there are two hoppers *a*, *a'* with opposite nozzles *c*, *c'* closed by the same stoppers so that different materials can be mixed. In Fig. 5, the nozzles *c''* are shown sloping and closed by stoppers *d''* sliding through guide-sleeves *g''* and provided with openings *n* into central bores *m*, so that, when the openings *n* come opposite the discharge openings, the material can flow out through the stoppers in vertical streams.

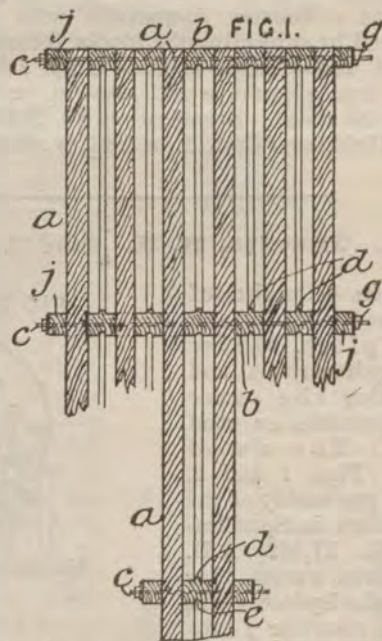
14,001. Czajrnkow, C. June 19.

Stone, artificial; fire-proof compositions.—Substances having isolating and insulating properties, such as those used for electric and heat insulation and for use against fire, water, and acid, are manufactured by subjecting suitable materials to the simultaneous action of heat and pressure *in vacuo*. The material may consist of a mixture of moisture-attracting substances, for example silicates, such



as asbestos, and a waterproofing or agglomerating substance, such as copal or viscose, or these materials may be arranged in layers. Metal parts may be pressed into the treated mass. In the particular form of apparatus shown, slabs are moulded between plates *c*, sliding on bars *d*, and heated by steam from conduits *g*. The oven is evacuated through a pipe *b* and pressure is applied by the piston *k* of an hydraulic press, the valve of the accumulator being gradually opened as the material contracts, by means of a rod *n* and lever *o*.

14,028. Ferguson, J. June 19.



Casting.—Moulds for casting slabs or blocks are formed of sides *a* of wood, metal, &c., separated by division pieces *b* which are secured by bolts *c* passing through them. Strengthening-pieces *j* are fitted to the external sides of the moulds, being

either fixed thereto, or held in position by the bolts *c*. The bolts *c* are formed with a screw at one end to receive a nut which is first roughly adjusted when the moulds are to be used, the whole being tightened up by means of a cotter *g* passing through a slot in the other end of the bolt. The bolts may be provided with cotters at each end, or may be provided at each end with flat heads having inclines on their inner faces adapted to slide on corresponding inclines on the washers. The inner surfaces of the moulds are roughened, ribbed, or corrugated, or may be provided with permanent or removable linings, and the division pieces *b* and the top and bottom of the mould may be formed with projections *d* and recesses *e* to form interlocking bricks or slabs.

14,173. Clark, W., [*American Hydrolit Co.*]. June 20.

Cements.—In the manufacture of magnesia cements by the use of a substantially-dry ingredient convenient for shipment, as described in Specification No. 29,654, A.D. 1896, the dry ingredient consists of 36 parts of sawdust, 85 of magnesium-chloride solution of 36·8° Bé, and 25 of infusorial earth. This is added to the magnesium oxide immediately before use. The cement is particularly useful for continuous flooring and flooring-tiles.

14,205. Benold, J. June 21.

Fire-proof coverings and compositions.—A starching preparation, which is stated to render the articles treated non-inflammable, consists of sodium tungstate, epsom salts, magnesium carbonate, maize flour, borax, sodium carbonate or bicarbonate, and ultramarine blue.

14,205A. Benold, J. Dec. 20.

Fire-proof coverings and compositions.—A preparation for starching clothes, which renders the articles treated non-inflammable, consists of a mixture of sodium tungstate, epsom salts, magnesium carbonate, borax, sodium hyposulphite and bicarbonate, and maize flour. The maize flour may be replaced partly by french chalk or rice flour, or wholly by the latter.

14,233. Liebold, R., Wittig, F. E., and Grimm, C. June 22, 1905, [*date applied for under Patents Act, 1901*].

Cements.—Portland cement is waterproofed and efflorescence is prevented by impregnating the warm clinker with a suitable soap mixture instead of treating the cold clinker as heretofore.

P 12422

14,297. Speer, A. V. June 22.

Stone, artificial and imitation.—A composition suitable for use as a covering for floors, walls, ceilings, pavements, or the like or for making ornaments consists of a mixture of one part of waste asbestos or the like, one part of silica or other equivalent earthy substance, two parts of magnesium chloride, and two parts of calcined magnesite. The asbestos and silica are first saturated with a portion of the magnesium-chloride solution and the magnesite is mixed with the remainder, after which the two mixtures are incorporated.

14,774. Niedermaler, H., and Poujol, C. June 28.

Cements.—Cementing-meal, i.e. burnt magnesite, is mixed with a solution of cementing-salt of 31° Bé, i.e. a mixture of the magnesium and calcium chlorides; and the mixture is cast on glass or other smooth plates. The slab produced may be ground or polished.

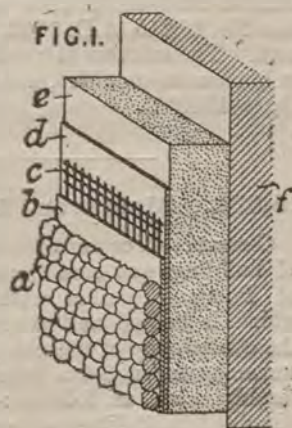
14,992. Wilson, J., and Wilson, J. July 2.

Cements.—An hydraulic cement, which will withstand the action of acids, is prepared by mixing 5 per cent of salt with vat waste, and calcining the mixture and grinding it to powder.

15,175. Dolmetsch, H. July 4.

Sound-deadening coverings; fire-proof coverings.—

In order to prevent echoes in large halls, a wall covering, stated to be fireproof, consisting of fragments *a* of cork secured to a canvas or wire-work backing *c* by an adhesive medium *b* is applied by means of a second adhesive medium *d*, either to the plaster *e* or directly to the brickwork *f*. The backing *c* may be corrugated so as to leave air spaces between it and the plaster or brickwork.



15,539. Engelhorn, F., [*trading as Boehringer & Soehne, C. F.*]. July 9.

Cements; refractory substances.—Natural or artificial corundum or molten aluminium oxide is mixed with water and cement, lime, or gypsum,

c 2

or other binder which hardens with water, and is moulded or cast, and burnt, for the production of ceramic masses for all kinds of implements, vessels, and articles for chemical, metallurgical, and other purposes, for alkali-proof diaphragms, for coatings and linings for metals, and as protective coatings for fire-proof and other cements.

15,553. Schougaard, S. July 9.

Cements.—In the manufacture of artificial marble, equal parts of boiled milk and water, mixed with a small quantity of dextrin or other suitable binder, are added to the main components, viz. marble cement and flour of Carrara marble.

15,734. Collins, H. A. D. July 11.

Refractory substances.—Bricks for lining furnaces, retorts, crucibles, and the like are manufactured from sodium silicate of a density too high for use at ordinary temperatures, e.g. 175° Tw., and from sand or other silicious materials, with or without calcium compounds, such as calcium chloride or lime. After moulding, the articles are burnt at a high temperature, say from 1500 to 2500° C. Specification No. 16,215, A.D. 1902, is referred to.

15,735. Collins, H. A. D. July 11.

Refractory substances.—In the manufacture of refractory materials from silicious substances and sodium silicate, with or without alkaline or alkaline earth compounds as described in Specification No. 16,215, A.D. 1902, solid sodium silicate is used. The mixture is rendered plastic with steam or hot water, moulded, and burnt at a temperature above 1500° C.

15,808. Simonsen, L. July 12.

Cements.—A cement for application to the fronts of buildings and ornaments consists of a mixture of Portland cement with a solution of casein, which is heated and stirred until the mass is of the consistency of treacle. The cement is applied warm by means of a brush. The cement is preferably made as follows:—3 kilos of casein are dissolved in 3 litres of ammonia and 32 litres of boiling water are added. The whole mixture is then heated for about half an hour and about 50 kilos of cement are added and the mixture is heated and constantly stirred.

15,907. Traube, I. July 13.

Stone, artificial and imitation.—Stone and the like, for example agate, are imitated by covering suitable surfaces, such as glass, celluloid, stone, and wood, firstly with an aqueous solution of a

colloidal substance containing a salt &c., and then with an aqueous solution of another salt &c., so as to form a precipitate with the first salt &c. The second solution may also contain a colloidal substance and may merely be poured by the side of the first so as to contact with it, and the layer may be varnished. Articles may be moulded from the mixture. When silver salts are used, the precipitate may be exposed to light and developed. Other substances, such as fluorescent bodies, naphthaline, mica, talc, mother-of-pearl, formaldehyde, tannin, glycerine, or antiseptics, may be added. Varnishes, the viscosity of which has been increased by the addition of suitable substances, may be used in place of the colloidal solutions. Specification No. 1972, A.D. 1866, is referred to.

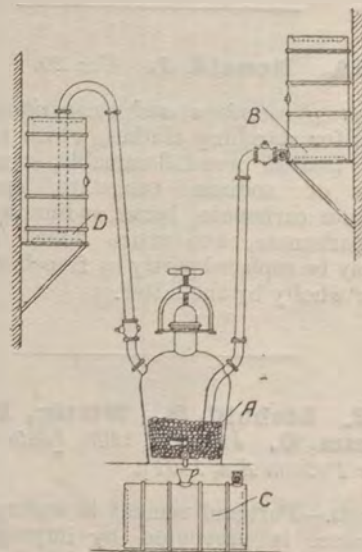
15,993. Johnston, R. July 14.

Asphalts.—An asphaltic matrix of ground stone, trass, and Portland cement or lime, mixed with boiling tar, oil tar, or pitch, is laid above and below the ordinary metalling of roads to give a waterproof and dustless construction.

16,104. Deidesheimer, A., and Jurschina, F. July 16.

Refractory substances.—In the preparation of fire-resisting blocks, tiles, and the like containing 96 to 99 per cent of powdered fire-brick, broken moulds, sand, stone waste, ashes, or other hard natural stone and 1 to 4 per cent of clay, the clay is added as a sludge, the mass being thoroughly stirred during the introduction, and the material is then dry pressed into moulds and burnt.

16,164. Boulton, A. J., [Neuburger, B.]. July 17.



Cements.—In the manufacture of Sorel cement

from magnesium oxide and chloride, a solution of the latter before the addition of oxide is saturated with carbon dioxide evolved during the preparation of magnesium chloride, to be used in a subsequent operation, from magnesite and hydrochloric acid. In one form of apparatus, the gas generated in the vessel A is passed into the magnesium-chloride solution in a tank D, while the chloride for a subsequent operation is run into a second tank C.

16,423. Labour, V. Aug. 12, 1905, [date applied for under Patents Act, 1901].

Cements; concretes.—Stair treads, floorings, and the like are made of crystalline or amorphous carborundum or similar carbides agglomerated with a self-supporting binder such as slow or quick setting cements, fat or hydraulic limes, asphalt powder or mastic, artificial asphalt, stucco, or glass, devitrified if desired, but not including a mixture of magnesium oxide and magnesium chloride. If desired, the material may be made in situ and the carborundum may be restricted to the parts subject to friction. The Specification in the original form as published under the Act of 1901 comprises also (1) the use of any binders employed in building for agglomerating the carborundum, and does not except the use of oxychloride cement, and (2) the application of the composition to building and engineering purposes, for example, to flagstones, tiles, and plates.

16,714. Engelhorn, F. July 24.

Refractory substances.—Aluminium compounds are formed by fusing alumina with oxides of metals or non-metals, and ceramic masses are made therefrom. Alumina may be combined with boric anhydride, chromium oxide, iron oxides, kaolin, bauxite, copper oxide, magnesia, phosphoric acid, silica, titanium dioxide, zinc oxide, &c. Examples are given of compounds containing in addition to alumina the oxides of the following elements: (1) iron, magnesium, silicon; (2) chromium, iron, magnesium; (3) chromium, iron, zinc; (4) copper; (5) zinc; (6) chromium, silicon, titanium (made from kaolin, alumina, and chromium oxide). The addition of magnesia and zinc oxide produces compounds very resistant to alkalis; the addition of chromium oxide and magnesia increases the resistance to the action of lime, cement fluxes, glasses, and the like at high temperatures. Compounds of very high melting-points are obtained by combining alumina with magnesia and chromium oxide or with zinc oxide. The aluminium compounds produced as above may be treated in a granular or pulverulent condition with clay or similar binding-substances, mortar formers, calcium, magnesium, aluminium, and alkaline compounds, slacks, glasses, fluxes of all kinds, and organic and cementitious substances by mixing them with one or more of these substances, moulding, and casting and subsequently burning. The treatment is by the usual methods, suitable

proportions being 80 to 90 per cent of aluminium compound and 20 to 10 per cent of binding-material.

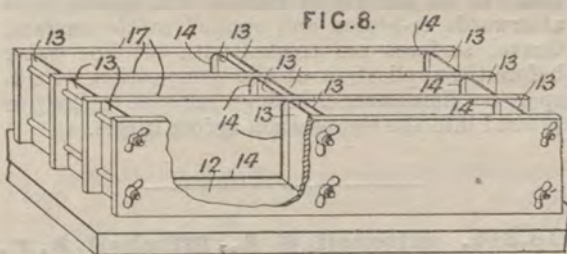
16,869. Petty, F., and Petty, W. July 26.

Fire-proof coverings and compositions; sound-deadening coverings and compositions; cements.—A slab for partitions, ceilings, &c. is composed of a composition consisting of the following substances in the proportions stated, namely: coke breeze 6, plaster of paris 6, lime 4, sawdust 2, and asbestos 1 part, by measure. The asbestos may be omitted. The slab is reinforced by means of a central web of woven rush reeds, which have been previously soaked in alum solution. The slab is sound-, fire-, and damp-proof.

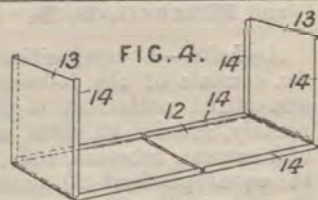
17,006. Timofeeff, P. July 27.

Cements; fire-proof compositions.—A fire-proof cement is manufactured from calcium sulphate and 2-10 per cent each of silicious mortar and dextrin or casein, with or without calcium carbonate, tufa, heated silicious alumina, puzzuolana, trass, calcined clays, slag, calcium fluoride, flour, colours, alum, ammonium sulphate, boric acid, or the like. When a mixture of calcium sulphate and carbonate is used, it is calcined at or below 150° C.; otherwise the temperature of calcination is 130° C.

17,424. Bartlett, G. L. Aug. 2.



Casting concretes into bricks &c. Moulds are used comprising essentially flanged resilient strips with their ends 13 bent at right-angles or



more to the base part 12 and flexibly connected or integral therewith; flanges 14 run along either side of the strip and abut in assembled position at the corners. These resilient members are assembled with partitions 17 between them and clamped together to form complete moulds. The flanges on the base prevent the escape of water from the concrete.

17,569. Apperley, W. J., and Hullinghorst, F. J. D. Aug. 3.

Cements ; asphalts.—In the manufacture of artificial stone and other plastic articles from Sorel cement, which is a mixture of magnesium oxide and chloride, the magnesium chloride is first mixed with a double salt obtained by the action of ammonia on lead acetate. Fillers such as clay, quartz, slate, sand, and coal, or fibrous substances, such as sawdust, cellulose, peat, asbestos, and leather waste, and bituminous materials, such as asphalt, pitch, tar, resins, oils, and the like, may be added. The oils and fats are first emulsified or gelatinized, for example by acting upon resin by caustic potash and adding the fats or oils to the solution obtained. The resin solutions or bituminous substances may also be oxidized, for example by means of a solution of barium peroxide in hydrochloric acid, until a thick gelatinous mass is formed.

17,761. Kelly, T. D. Aug. 7.

Asphalts.—Relates to compositions for surfacing roads, paths, and floors, of the class in which tar or pitch, alkaline water, and powdered limestone, granite, or slag are mixed together. The ingredients are used in approximately the following proportions, namely : tar or pitch, 12 per cent ; alkaline water, such as sea-water or a dilute solution of sodium silicate, 13 per cent ; powdered limestone or granite, 50 per cent ; and powdered furnace slag 25 per cent ; or 75 per cent of limestone, granite, or furnace slag may be used. The materials are heated to boiling-point and amalgamated in a vacuum pan, and may be applied direct to the surface or formed into blocks to be afterwards re-heated and applied to the surface. Gravel surfaces are treated with alkaline water before the application of the composition. Feldspar or limestone chippings may be rolled or pressed into the composition before it sets.

18,316. Mitchell, G. A., Mitchell, A. J., and Mitchell, E. E. Aug. 15.

Asphalts.—A composition for roads, footways, &c. consists of the following ingredients heated and mixed preferably in the proportions stated, namely, granite 40 parts, asphalt 30, bitumen 10, and cement, asbestos, soda, chalk, sand, and shell in equal portions 20 parts. According to the Provisional Specification, rag-stone or plants may be used in place of granite.

18,564. Hughes, A. M. Aug. 18.

Asphalts.—In the manufacture of tar macadam, granite obtained from the quarries of Inverkeithing,

Fifeshire, and its immediate neighbourhood is employed. The granite is dried by heat and mixed with boiling crude tar in the proportions of four gallons of tar to a cubic yard. The tarred granite is allowed to season, and an additional one gallon of distilled tar to the cubic yard is added immediately before use.

18,718. Bartlett, G. H. Aug. 21.

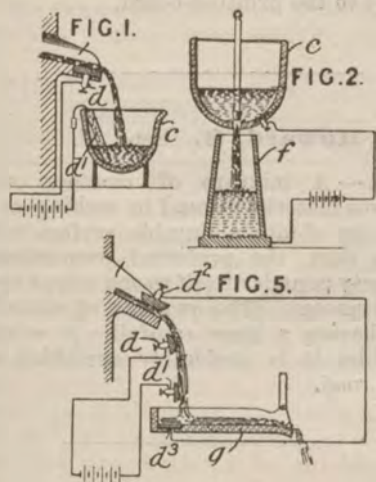
Casting.—In making concrete bricks &c. having a polished face, concrete containing hydraulic cement and an excess of water is poured into a multiple mould provided with a glossy bottom panel *a*, and, during the setting, the excess of water is allowed to drain off, so that the last hardening takes place in the portion of the material which is in contact with the glossy panel. In order to produce an ornamented concrete article, a layer of hydraulic cement is first deposited upon the smooth mould surface, and then a mass of concrete containing an excess of water is poured in to fill the mould. A suitable concrete consists of six parts of broken stone, three of sand, and one of cement. The panel *a* may be made of celluloid, hard rubber, or japanned or nickel plates. One or more sides of the bricks &c. may be formed with a polished surface by means of glossy panels placed against the walls of the mould. Smooth spherical concrete bodies may be formed in a similar manner.

[Reference has been directed under Patents Act, 1902, to Specifications No. 1535, A.D. 1877, and No. 19,740, A.D. 1891.]

18,935. Wynne, F. Aug. 22.

Slags, treatment of ; casting.—A stream of red-hot molten or semi-molten silicate, glass, or other material is heated, to maintain or increase the fluidity of the material while falling freely from one place to another, by a current of electricity flowing lengthways through the whole cross-section of the stream. Fig. 1 shows one electrode *d* fitted in the spout of a melting-furnace, the other electrode *d'* being arranged in a ladle *c*. The second electrode *d'* may be arranged in contact with a lower portion of the stream. In another arrangement, Fig. 2, one electrode is fitted in a ladle *c* situated above an ingot mould *f*, the base of which forms the other electrode. Fig. 5 shows the current applied to the stream by means of four electrodes so arranged that the current may pass directly through the stream between the terminals *d*, *d'*, or indirectly through the stream to the

electrode d^2 , thence to the electrode d^3 fitted in a trough g , and through the stream to the electrode d^1 . In another arrangement, the molten material falls from the spout of the furnace into a trough,



whence it passes over a disintegrating-wheel. One electrode is fitted in the spout and the other electrode is connected to the wheel.

18,964. Schwanenberg, E., and Rinne, A. Aug. 24.

Stone, hardening.—Artificial-stone compositions containing calcium hydrate are hardened by subjecting them alternately to the action of carbonic-acid gas, or gases containing it, and to the action of heat for the purpose of removing the moisture formed during the reaction. The moisture is carried away by suction or by a current of inert gas.

18,974. Vanino, L., and Lambrecht, R. Aug. 30, 1905, [date applied for under Patents Act, 1901].

Stone, artificial and imitation.—The luminous power of the sulphides of the alkaline earths is increased by the addition of lithium, thorium, or thallium salts. The lithium salt increases the duration of luminosity, the thallium salt increases the sensitiveness to light, and the thorium salt increases the intensity of the luminosity. The salts are added to the sulphides singly or together and generally in conjunction with the addition of a small quantity of a bismuth salt. Stone-like bodies are obtained by adding the luminous substance to a material, such as potassium nitrate, in a molten condition.

19,038. Schwanenberg, E., and Rinne, A. Aug. 25.

Stone, hardening.—Artificial stone consisting chiefly of calcium hydrate, with or without limestone, dolomite, or filling-materials, is hardened by means of carbonic-acid gas or gases containing it, which are heated to about 35–110° C. and are not saturated with water vapour. In this condition, the hardening-gas acts as a drier.

19,186. Rauhoff, J. M. Aug. 28.

Stone, hardening and preserving.—The surfaces or buildings, blocks, side-walks, &c. of concrete, cement, stone, brick, or other porous material are rendered waterproof by the application of finely pulverized metal, such as iron or brass, which enters the pores and is oxidized by exposure to the atmosphere. The metal may be applied in the dry state by spraying, rubbing, &c., or by means of a liquid such as water in which it is held in suspension.

19,233. Kellen, F. Aug. 28. *Drawings to Specification.*

Stone, artificial and imitation.—An artificial stone, for use as floor covering, wainscoting, paneling, &c., consists of a mixture of 90 lb. stone chips, 10 lb. stone dust, 10 lb. magnesite, 4 lb. talc, and 4 lb. colour incorporated by means of a solution of 12½ lb. magnesium chloride, ½ oz. sodium silicate, and ½ oz. sulphuric acid in water. The plastic material so produced is allowed to set in a mould.

20,298. South, J. T., Payne, G., and Payne, E. G. Sept. 12.

Cements.—A cement is preferably composed of 600 parts of plaster of paris, 500 parts of chalk, 75 parts of Portland cement, 12 parts of copperas, 12 parts of alum, and 12 parts of isinglass or fish glue.

20,723. Justice, P. M. [International Pavement Co.]. Sept. 18.

Asphalts.—In bituminous paving compositions consisting of (1) body material, such as crushed stone or sand, (2) fines, such as very finely comminuted stone, and (3) a bituminous cement as a binder, it has been proposed to subject the fines to a preliminary impregnation with a portion of the binder, which usually consists of pitch or of an asphaltic cement containing residuum of petroleum or other flux oil. The present invention has for its object to prevent deterioration of the

pavement by eliminating from the cement before it is incorporated in the mixture substantially all oil that might be absorbed by the fines or by the body material. This is effected by subjecting the residuum or other flux, before or after the formation of the cement, to a conversion or oxidation, so as to produce a pitchy substance. The asphalt also is preferably refined and desalified before admixture with the converted flux.

20,901. Hornell, J. Sept. 20.

Stone, artificial; stone, colouring.—In the manufacture of artificial marble or other ornamental stones of the kind in which mother-of-pearl waste is incorporated with a cement, waste corals are mixed with the mother-of-pearl.

21,011. Chiodo, A. Z. Oct. 10, 1905, [date applied for under Patents Act, 1901]. Drawings to Specification.

Cements; mortars; concretes; stone, artificial.—Relates to concretes and cements for bricks and joints therefor. The concrete is composed of 2 parts of gravel, 1 part of sand, and 2 parts of cement; or 2 parts of washed sand, 1 part of granular sand, and 1 part cement, with 3 per cent of silicate of potash added to the mixing water; or of 10 parts of hydraulic lime, 5 parts cement, 20 parts fine sand, and 20 parts granular sand, with 1 per cent. silicate of potash. Uncompressed bricks are steeped in a solution composed of 1 part silicate of potash, 5 parts cement, and 50 parts water, to give them an impervious coating. The mortar for the joints consists preferably of 2 parts of screened cement to 3 of sand for structures exposed to water or moisture, the marl, before burning, containing 76 per cent of silicate alone or silicate and carbonate; and for structures exposed to the sun or heat, 3 parts sand and 2 parts hydraulic lime made from limestone containing 76 per cent of marl, 14 of clay, and 10 of sand.

21,011A. Chiodo, A. Z. Oct. 10, 1905, [date applied for under Patents Act, 1901]. Drawings to Specification.

Cements; mortars; concretes; stone, preserving.—The compositions for the bricks, cements, and mortars described in Specification No. 21,011, A.D. 1906, are repeated in this Specification.

21,373. Clarke, J. W. Sept. 27.

Casting confectionery. Pattern dies to make starch moulds are made of plaster of paris, mixed

with a solution of carbonate of soda and Brunswick green and cast in indiarubber-covered metal models, the plaster dies being afterwards baked, immersed in melted sulphur till saturated, taken out, dried, and if necessary pierced, to facilitate attachment to the printing-board.

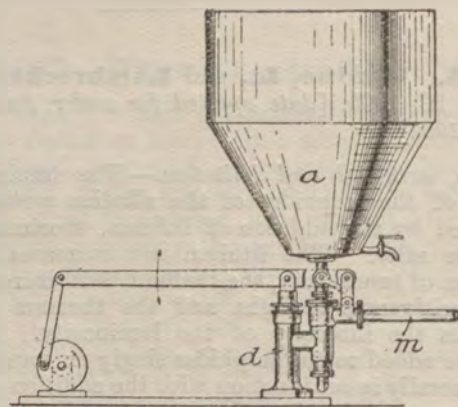
21,502. Howard, S. Sept. 28.

Cements.—A mixture of common salt and cementitious material is used in making or repairing roads to obtain a durable surface relatively free from dust, the preferred proportion being about twenty pounds of salt to one ton of hydraulic or natural cement. The quantity of salt is less for localities having a large rainfall. A solution of calcium chloride is preferably sprinkled on the completed road.

21,576. Hippe, E. E. Sept. 29.

Stone, hardening and preserving.—Resin, used for hardening and preserving articles made of plaster of paris, cement, &c., has its melting-point lowered by the addition of about 20 per cent of liquid or easily-molten hydrocarbon, such as petroleum or paraffin. When the article is dipped in this molten moisture, there is less likelihood of its being injured. The objects may first be impregnated with the added hydrocarbon at a temperature of 40–80° C. Other substances, such as sulphur, asphalt, gum, &c. may be added to the resin bath.

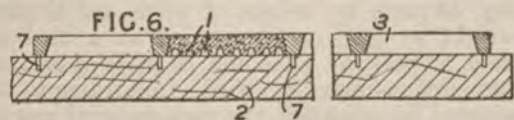
21,681. Klinger, G. Oct. 1.



Casting soap bars. The pump *d* forces the liquid mass from a copper *a* continuously and directly into a long moulding-conduit *m*, where it is allowed to cool gradually without artificial aid. [Reference has been directed under Patents Act,

1902, to Specification No. 10,601, A.D. 1884, [Abridgment Class Moulding &c.].

21,778. Verhoeven, P. A. Oct. 2. No Patent granted (Sealing fee not paid).



Casting.—Mosaic tiles are made by adding a binding-material to marble tesserae 1 arranged to a suitable pattern on a marble slab 2 in a moulding-frame 3 having slanting sides and dividing-ribs. After being subjected to pressure, the tiles are removed from the frame and dried, and the mosaic surfaces are polished. The moulding-frame is provided with pins 7 which are inserted in holes in the marble slab to hold the frame in position. Draining-grooves are arranged in marble slabs underneath the dividing-ribs of the moulding-frame.

22,317. Gonnermann, H., and Reif, N. Oct. 9.

Stone, artificial; fire-proof coverings and compositions.—In the manufacture of compositions resembling wood, linoleum, india-rubber, or stone, from fibrous materials, such as peat, wood, cork, paper, cellulose, textile refuse, &c., mixed with oils, fats, tars, and resins, introduced in the form of a spray, a neutralizing-agent, such as ammonia or calcium hydroxide, is added, prior to the addition of the binders, in order to neutralize the acids produced in the subsequent treatment of the binding-material with a vulcanizing, oxidizing, or nitrating agent.

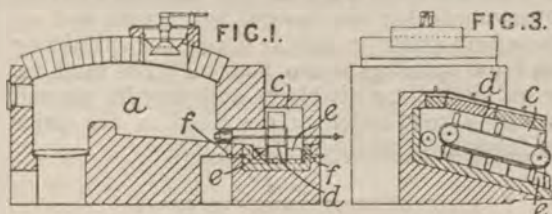
22,390. Gramiccia, C. Oct. 10.

Concretes; stone, natural and artificial, hardening; fire-proof coverings and compositions.—Bricks and similar building-materials are formed of a composition consisting of various volcanic substances such as lapilli, red and black puzzuolana, "cretoni," and tufa either separately or together mixed with a tenth part of well slaked lime. After moulding, the bricks are treated with steam at a pressure of from 6 to 8 atmospheres, after which they are rendered fire-proof by firing. Gravel, sand, or calcareous substances may be added in quantity not exceeding one half of the weight of the mixture, and a small quantity of cement should also be added in this case.

22,425. Coles, S. O. Cowper- Oct. 10.

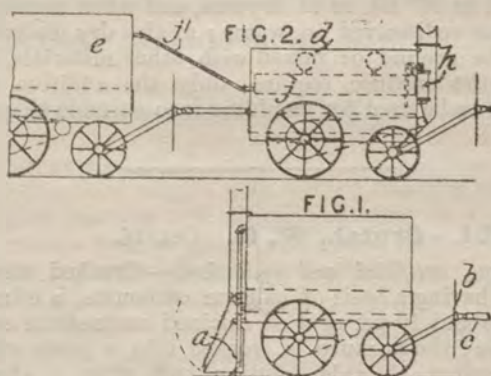
Cements; slags, treatment of.—In the manufacture of cement from slag or other materials, the slag,

after being broken up and mixed with calcium carbonate, is mixed with a weak acid solution and burnt in an electric furnace. The slurry formed as described may be dried and broken up before being



charged into the furnace. The process may be made continuous by providing a travelling belt or table to carry the materials between the electrodes. Sometimes the materials may be subjected to a preliminary heating in the ordinary way so as to economize current. Fig. 1 shows in vertical section one form of furnace which may be employed, and Fig. 3 shows a section at right-angles through the electric furnace c. The material is first heated in the furnace a. The electrodes e are adjustably carried on a cradle f and between them passes an endless belt d, carrying refractory blades for feeding the charge through the furnace.

22,434. Thwaite, B. H. Oct. 11.



Asphalts.—Consists in improvements in connexion with the tar heating and spreading machines described in Specification No. 13,551, A.D. 1906. The tar jets are protected from wind and rain by a turn-over shield a, Fig. 1, and an iron guard is placed between the furnace and the shafts c to protect the tractor from heat. To increase the spraying effect of the air pressure in the feed-tank, water may be added to the tar. The tar, after being sprayed, is swept in by a rotary brush, preferably of metal. An auxiliary heating-vessel d, Fig. 2, is employed, and has a pump h for supplying additional air pressure to the original machine e, the tar feed-tank of which may be connected to the heater d by flexible metallic tubing through which

tar is supplied by the pump or by gravity. Instead of being led directly from the pump to the machine *c*, the air may be stored in a reservoir *j*, from which it is drawn through a flexible tube *j'*. Sand, granite, limestone, or calcium chloride is spread on the tarred surface from a bin on the machine *e* having compartments for the several substances and an archimedean screw or similar device for sprinkling them from openings at the bottom. The sand &c. may be ejected by air-blasts and may be pressed down by a road-roller as described in the prior Specification.

22,887. Robeson, J. S. Oct. 16.

Cements.—Waste sulphite liquor containing a "ligno-sulphonate" together with tannins, gums, acids, sugars, &c., formed during the manufacture of cellulose or fibres from spruce wood and other woods, is taken from the digester, neutralized or nearly neutralized with milk of lime, caustic soda, or other suitable alkali, or alkaline earth, and concentrated at a temperature not exceeding or only slightly exceeding 100° C. in vacuo or in a non-oxidizing atmosphere, such as nitrogen, carbon dioxide, or producer gas. Air may be used in a closed circuit, in which case the first parts treated may be run to waste. The liquor yields no precipitate with a strong solution of gelatin or glue. It may be concentrated to 18–20° Bé., and may be used as a binding-agent in the manufacture of sand cores and in the formation of plastic masses with inorganic granular material. Or it may be concentrated to 30° Bé. or to dryness, and when required for use redissolved in water; or the dry material may be ground or mixed with other materials, so that the mixture requires only the addition of water to be used for moulding into suitable shapes &c.

22,901. Grotch, W. G. Oct. 16.

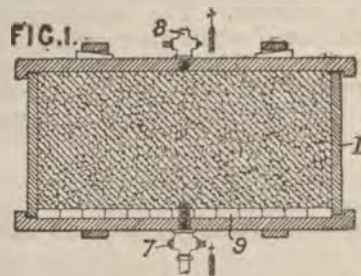
Stone, artificial and imitation.—Crushed stone dust, having a basis of calcium carbonate, is mixed with about 10 per cent of calcined magnesium carbonate; the mixture is worked into a paste with magnesium-chloride solution and, after a short period, a further quantity of magnesium-chloride solution is added until the mixture attains the consistency of cream. It is then cast into moulds and allowed to harden.

23,271. Johnson, J., and Titley, J.
Oct. 20.

Asphalts &c.—A composition consisting of stated proportions of dried and pulverized clunch or pit-mound clay, preferably obtained from ironstone mines, or other clay, pitch, and tar heated together is applicable as a binding-medium for broken stone &c. in the construction of roads, asphalt paths, and

other surfaces, for concrete, as a grout for a bed of broken stone forming a waterproof and dustless surface, for use in the formation of damp courses in buildings, for filling spaces in hollow walls and the spaces between granite sets or other blocks, including wood blocks, of roads or floors, or for analogous purposes. The ingredients are mixed in the approximate proportions of 50 parts by weight of clay, 40 parts by weight of pitch, and 10 parts by weight of tar; or when used as a binding-medium, 30 parts of pitch and 20 parts of tar, but the proportions may be varied. According to the Provisional Specification, the road material may be supplied already mixed with the composition.

23,375. Wolfsholz, A. Oct. 22.



Casting.—In making concrete blocks, tiles, mosaics, &c., liquid cement-mortar or the like is forced into a closed mould 1 under pressure through the valve 7, air escaping through the valve 8, till every crevice is filled, when the supply is cut off and the material allowed to set. Blocks 9 put in the mould form the front of a mosaic. It is stated that by the use of iron framework and suitable boarding, whole buildings can be made in this way.

23,450. Bamber, H. Kelway. Oct. 22.

Cements.—In order to cool, regulate, and increase the setting time of Portland and like cements water in the form of fine spray or drops is supplied in measured quantities to, and thoroughly mixed with, the cement, while in motion in a tube mill or similar grinding-mill, either during or after the grinding-process. Tables are given in the Specification showing the percentage of water which should be added in order to give definite setting times. The process is applicable to cements which have been ground and stored for several years.

24,162. Fairweather, W., [*Brown Hoisting Machinery Co.*]. Oct. 30. *Drawings to Specification.*

Casting.—The bases for masts for wireless telegraphy are made of armoured concrete plates

separated by insulators. The plates are cast in position in rectangular frames, and, to prevent the cement from running on to the insulators, the latter are surrounded with dry sand over which oiled paper or other moisture-proof material, perforated to allow it to pass over the heads of the insulators, is placed, and the cement is cast on this. When the cement has set, the sand is removed.

24,233. British Thomson - Houston Co., [*Allgemeine Elektrizitäts-Ges.*]. Oct. 30.

Refractory substances.—Supports for electric-lamp filaments are made by mixing finely divided thoria or magnesia, which may contain up to 2 per cent of hydrate, with a binding-material to form a paste, moulding or pressing the paste, heating the resulting bodies to a temperature not below 2000° C., and dipping them in a mixture of hydrofluoric and sulphuric acids, whereby the glazed skin is removed and a surface of pure oxide left. Mixtures of the two oxides may be similarly treated, a surface of pure thoria being obtained.

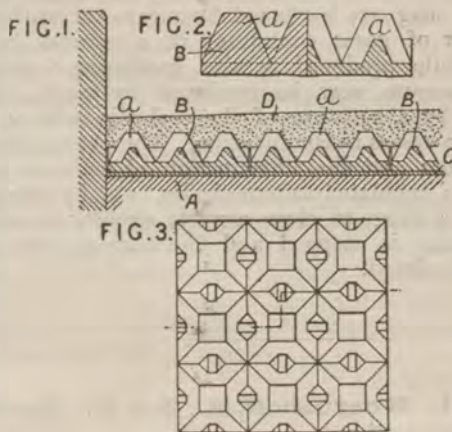
24,529. Woof, T., and Murphy, T. Nov. 2.

Asphalts.—An insoluble composition containing an oil or tar, together with small proportions of pitch or bitumen, is used for laying dust or as a road-making material either alone or in combination with the soluble mixture described in Specification No. 16,611, A.D. 1906, [*Abridgment Class Roads &c.*]. The consistency of the composition is varied by the addition of asphalt, resin, and cement. The composition may be used in conjunction with calcium, magnesium, or other chloride. Tar-oil, oil-tar, green oil, shale oil, crude oil, black fluxing oil, and petroleum are mentioned as suitable oily constituents. A binding-material, for example plaster of paris, gum, glycerine, sulphur, size, glue, shellac, alum, flour, or ammonia, and, in addition, lime, lead oxide, a dryer, and gutta-percha or india-rubber may also be added. The mixture is applied hot when necessary. The mixture may be combined with a road-making material, preferably one containing bitumen, cement, sand, clinker, or slag, sawdust, and fibrous material, together with gravel.

24,829. Metz, A. Nov. 7, 1905, [*date applied for under Patents Act, 1901*].

Asphalts.—A non-slipping sound-deadening flooring or pavement for footways, tramways, &c. consists of a concrete foundation A, an elastic layer C, and terra-cotta or similar ceramic blocks B having roughened surfaces filled and covered with a mixture D of asphalt, bitumen, and stony material, such as finely broken granite. Carborundum,

boron carbide, corundum emery, or their derivatives may be added, or may be pressed to a greater or less depth, depending on the traffic, into the layer D while it is hot. The blocks B may



have pyramidal or similar prominences *a*, as shown in section in Figs. 1 and 2, and in plan in Fig. 3, or they may have continuous rectangular or bevelled ribs produced by forcing them through dies. They may be combined with the layer D of granite and asphalt with carborundum &c. prior to being laid, a grouting of asphalt, or cement being used to fill the joints.

25,043. Hennings, J. Nov. 7.

Stone, artificial.—Artificial slate is formed of a mixture of 100 parts by weight of cement with 20–25 parts of brown-stone. The materials are intimately mixed and ground, and are then formed into a thin magma with water; this is poured into glass moulds and allowed to dry slowly. The moulds may be coated with grease so as to increase the impermeability of the product.

25,189. Krümpelmann, J. Dec. 13, 1905, [*date applied for under Patents Act, 1901*].
Drawings to Specification.

Concretes; mortars.—Damp-proof floors and walls, subject to the pressure of soil water, are formed of impermeable interlocking blocks pressed from concrete to which bitumen emulsion is added; the mortar also consists of bitumen emulsion, which may be of the kind formed by adding alkalies and barium peroxide to bituminous material and oxidizing rapidly, with the production of barium hydrate or carbonate.

25,417. Boulton, A. J., [*Cöln-Müsener Bergwerks Actien Verein*]. Nov. 10.

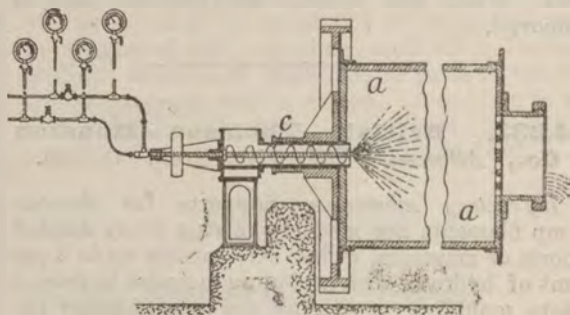
Slag, treatment of; stone, hardening.—Moulded articles, such as flagstones and pipes, made from ground slag are hardened by means of carbonic acid, or of gases containing it, a vacuum being meanwhile produced in the hardening-chamber. The vacuum may be produced by means of a pump, by absorption of the carbonic acid, or by both processes in combination. The production of a vacuum and the introduction of carbonic acid may be regulated automatically, e.g. by using a pressure gauge to close electric circuits by which the pump is stopped and the carbonic-acid gas inlet regulated.

25,621. Woerdehoff, A. Nov. 13. *Drawings to Specification.*

Stone, artificial and imitation; stonework, ornamental.—Facing-stone for imitating sandstone is made by applying to the faces of the moulded blocks incombustible material, such as clay, brick-dust, slag, &c., with or without combustible material,

such as coal. The material is then pressed or rammed, and the blocks are burnt.

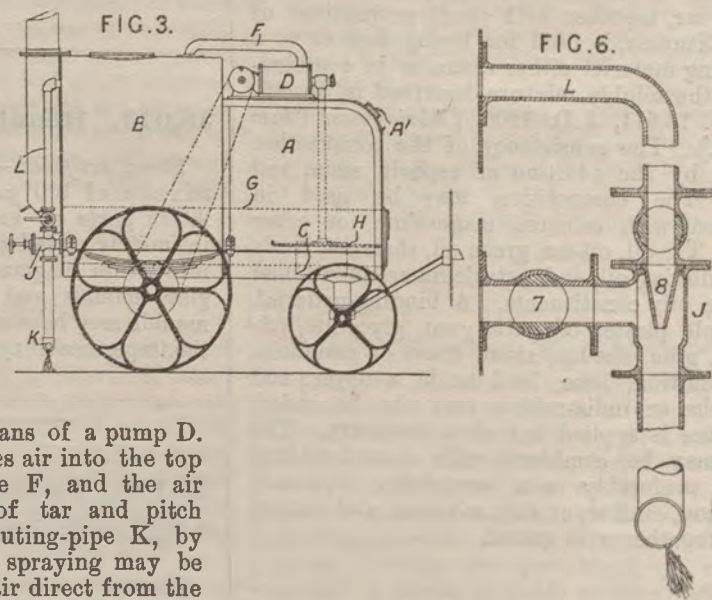
25,857. Brooks, E. W. Nov. 15. *Right to Patent relinquished.*



Cements.—Cement is hydrated and cooled by introducing a spray of cold water into the finishing-mill in which the broken clinker is ground, no water having previously been added to the clinker. The Figure shows a form of apparatus in which the clinker is fed into a ball mill *a* by means of a conveyer *c*, through which run water and compressed-air pipes for producing the spray.

26,818. Thwaite, B. H. Nov. 26.

Asphalts, heaters and spreaders for. A machine for spreading hot tar and pitch on roads as described in Specifications Nos. 13,551 and 22,434, A.D. 1906, comprises a vessel, shown in Fig. 3, consisting of an open tank *A*, into which the tar and pitch, preliminarily heated, are fed at *A'*, and a closed pressure-resisting tank *B* into which the mixture of tar and pitch is pumped from the tank *A* through a filter box *C* by means of a pump *D*. The same or another pump forces air into the top of the tank *B* through a pipe *F*, and the air pressure forces the mixture of tar and pitch through a valve *J* to a distributing-pipe *K*, by which it is sprayed. Further spraying may be effected by leading compressed air direct from the top of the tank *B* to the valve *J* by means of a pipe *L*, as shown in Fig. 6, the cone-shaped nozzles *8* increasing the spraying action. The pumps are fitted with ball valves and are driven by chain gear from one of the axles. The mixture of tar and pitch is highly heated in both tanks by means of a



flue *G* heated by a grate *H*. In some cases a small proportion of water may be added to the tar or tar and pitch to facilitate spraying, where dehydration is not essential.

27,059. Hocke, C. Nov. 28.

Cements.—In the process for making cement in which a wet mixture of fuel and slurry is supplied

to the kilns, the material is first pressed into blocks of a consistency such that when thrown into the kiln they spread out over the whole area. In order to bring the wet slurry to the consistency desired, finely ground half-burnt cement may be incorporated with it.

27,073. Watson, W. Nov. 28.

Fire-proof coverings.—A waterproof and fire-proof material consists of asbestos treated with balata alone or with other glutinous matter. Asbestos threads are woven or otherwise connected together, and the fabric is coated on one or both sides with balata in solution, two or more pieces being then pressed together and vulcanized. Instead of balata, glue may be used, the compound fabric being coated with balata and vulcanized. The asbestos threads may be treated with balata before weaving &c. Specification No. 18,851, A.D. 1891, [*Abridgment Class Waterproof &c. fabrics*], is referred to.

27,619. Collins, H. A. D. Dec. 4.

Refractory substances.—In the manufacture of refractory bricks, blocks, &c. from pulverized siliceous material (such as quartz or sea sand) and calcium hydrate or other equivalent alkaline substance (such as caustic soda or soda ash), the material is moulded to shape in the heated state and under high mechanical pressure. The bricks &c. are afterwards burnt in a kiln in the usual manner. Before burning, the brick may be subjected to steam pressure to facilitate chemical action. The materials are kneaded in a steam-jacketed pug together with steam or hot water to give plasticity and then pass into the mould.

27,875. Clark, A. Dec. 7.

Fire-proof compositions.—The fire-proof chambers of safes and strong-rooms are filled with a mixture of 15–50 per cent of magnesium sulphate crystals with a cheap dry non-conducting material, such as sawdust, wood pulp, carbon, mica, soapstone, silica, earth, or sand. The crude sulphate "Kieserit" may be used. According to the Provisional Specification, asbestos, china-clay, or Portland cement may be used as the filling-material.

28,199. Kilburn, B. E. D., [*Isolatoren-Fabrik "Pulvolit" Ges.*]. Dec. 11.

Stone, artificial.—In the manufacture of artificial stone and the like, as described in Specification No. 26,516, A.D. 1904, from pulverized minerals and

binding-agents, such as oils, fats, and the like, which have the property of hardening in thin layers in the air, at increased temperatures, sulphur is added to the binder so as to decrease the time of stiffening of the layers previous to moulding. If desired, the sulphur may be in the form of sulphur chloride, alone or dissolved in carbon bisulphide, or other easily decomposable compound. The solidification is completed by air treatment before moulding, and the hardening of the stone is completed in air as described in the prior Specification. As a particular example, 100 parts of infusorial earth are mixed with 15–20 parts of sulphur and 75 of an oily binder, the mass is distributed in a thin layer, or access of air is ensured from all sides, the mixture is stiffened at 140–160°C., and the moulded articles are hardened at 160–180°C. The material is also applicable for electric insulation and as a vulcanite substitute.

28,199A. Kilburn, B. E. D., [*Isolatoren-Fabrik "Pulvolit" Ges.*]. Dec. 11.

Stone, artificial.—The method of making artificial stone, described in Specification No. 26,516, A.D. 1904, by mixing pulverized minerals with fats &c., that harden when exposed to the air in thin layers, is modified by mixing resinous catalytic agents with these fatty binding-agents, so as to reduce the time of hardening. Those substances that dissolve in fatty and oily binding-agents and that possess the property of absorbing oxygen from the air and transmitting it to the binding-agent include colophony, pine resin, dammara resin, or Kauri gum, copal, amber, &c., resinous artificial products prepared from resins, glycerides or resinous or fatty acids by combination with metallic oxides, esters obtained by the combination of resinous acids with alcohols, naphthols, and other hydroxyl derivatives, mixtures or compounds of these substances, or oxidation products of them. The catalytic agents may be dissolved in the binders, or may be separately dissolved and subsequently mixed with them, e.g. in the form of liquid driers, drier extracts, &c. As an example, 50 per cent of resin or resinate is dissolved in linseed oil, and a powder consisting of three parts of ground quartz sand and two parts of ground clay is moistened with 17 per cent of the sand solution. The moist loose powder is solidified at 120–130°C., and compressed into moulded articles which are then hardened at a temperature of 150–180°C. The material is suitable for electric insulation.

28,468. Schudt, H. Dec. 13.

Casting; cements.—A plastic composition consisting of linseed oil, molten resin, infusorial earth, glue, and soap solution, with or without the addition of tow, preferably in the proportions of 1½ litres of oil and 150 grammes of resin to 10 kilos of infusorial earth is used for applying stucco, for

heat insulating, filling irregularities in the surfaces of fabrics, ribbons, and cords, for modelling, and for applying to wood, metal, burnt clay, such as vases or furnaces, marble, and glass, for example, for framing and bordering mirrors and glass

mosaics. The application to filling fabrics and the like is useful when the latter are used as patterns for making moulds. When it is used for applying stucco to walls, ceilings, &c., the latter requires no roughening.

A.D. 1907.

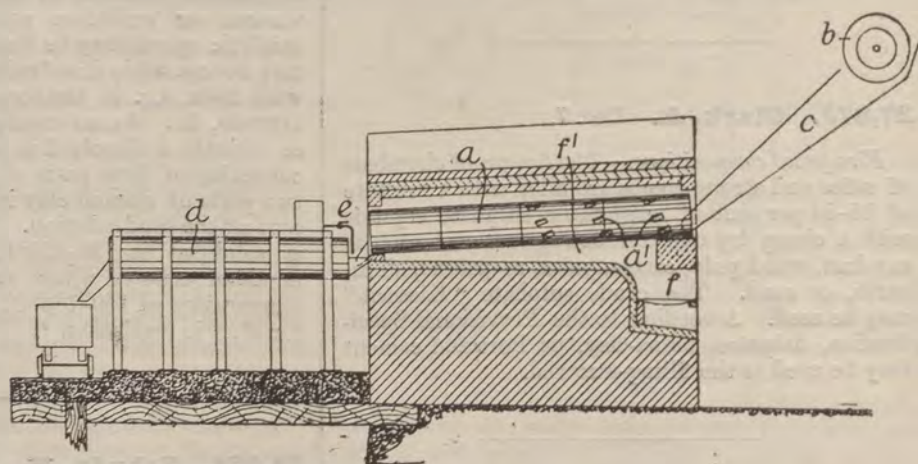
41. Barnett, W. T. Jan. 1.

Cements.—Suitable quantities of earth minerals and fresh bullock's blood are thoroughly incorporated, and the cement is coloured by the addition, during manufacture, of lime green, raw sienna, yellow ochre, Venetian red, or other colouring-matters.

[Reference has been directed under Patents Act, 1902, to Specifications No. 3052, A.D. 1868, [*Abridgment Class Starch &c.*], No. 21,734, A.D. 1894, and No. 9070, A.D. 1905, [*Abridgment Class Starch &c.*].]

242. Bradley, G. Jan. 4.

Asphalts.—In the manufacture of tar macadam, materials such as broken whinstone, granite, slag, limestone, &c. are fed from a screen *b*, through a shoot *c*, into one or more slightly inclined, rotating drying-cylinders *a*, open at both ends, and then passed direct to the tar-mixing chambers *d*, the tar being introduced at *e*. Angle-irons *a'* in long or short lengths may be fixed inside the cylinders at a suitable angle, so that the materials are gradually passed, and thoroughly turned over. The cylinders are enclosed in flues *f'* communicating with a furnace *f* or with a supply of hot waste gases, and may be perforated for the better access of heat to the stone.



[Reference has directed under Patents Act, 1902, to Specifications No. 4932, A.D. 1878, No. 13,761, A.D. 1895, No. 16,997, A.D. 1902, and No. 27,479, A.D. 1903, [*Abridgment Class Roads &c.*]; and No. 26,286, A.D. 1904.]

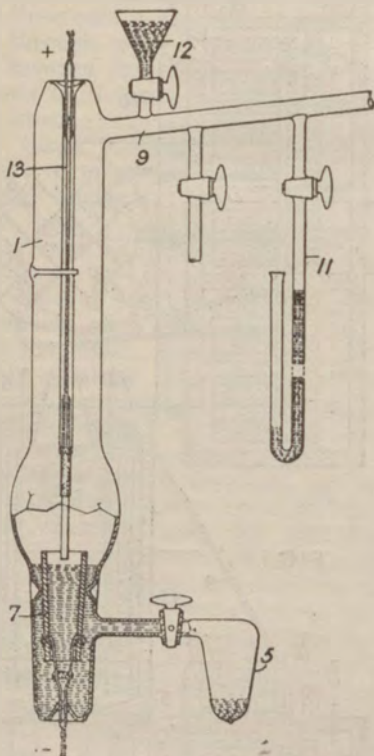
430. Hitchins, J. R., and Dunz, W.
Jan. 7.

Fire-proof compositions; concretes; cements.—An aggregate material comprising any ordinary substance, such as coke, brick, pumice, clinker, ashes, or the like, is mixed with coarse plaster of paris gauged with a warm solution of gelatin together with any coagulating-agent, such as tannic acid, chrome alum, potassium bichromate, or formaldehyde. A small quantity of alum may be added to accelerate

bardening. The preferred proportions are 24 bushels of aggregate material, 4 bushels of plaster of paris, 8 lb. of gelatin, 1 lb. of chrome alum or potassium bichromate, or $\frac{1}{4}$ lb. of tannic acid or 1 quart of a 40 per cent solution of formic aldehyde, and 7 lbs. of alum. It is stated that the above-described composition is both fire-proof and damp-proof and may be moulded into blocks or slabs or employed for plastering or covering walls, partitions, floors, and the like. Specification No. 818, A.D. 1868, is referred to.

547. Kuntze, B. Jan. 8.

Refractory substances.—A self-glazing fire-proof clay is composed of a mixture of dried and powdered common clay, finely-ground sand, and rock salt, in or about the proportions of 66 lb. of clay, 46 lb. of sand, and 9 oz. of powdered rock salt. Water is added to the mixture in order that it may be moulded into crucibles or retorts, or used as a lining for furnaces.

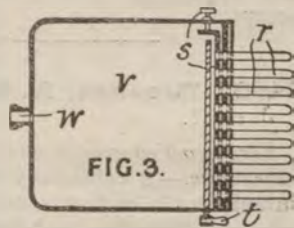
1197A. British Thomson-Houston Co.,
[General Electric Co.]. Jan. 16.

Refractory substances, such as boron, are subjected to vapour electric arcs to render them suitable for the manufacture of incandescent bodies for electric furnaces. The Figure shows one form of apparatus. A tube 1 is connected through a tube 9 and cocks to a mercury vessel 11, a supply of inert gas such as hydrogen, a pressure gauge 11, and a vacuum

pump. A stick of the material to be treated is inserted in a carbon tube or sleeve attached to a glass-covered conductor 13, so that it forms the anode. Mercury in the lower end of the tube 1 forms the cathode, the arc being struck and regulated by running mercury from the cathode into a bulb 5. The introduction of inert gas at a pressure of from 2.5 to 15 cm. of mercury confines the arc to the end of the stick, and an alumina sleeve 7 prevents damage to the glass.

1372. Riebe, C. Jan. 18.

Casting.—A ladle for casting confectionery comprises a body *v* closed on all sides and provided with an inlet *w* and a number of delivering nozzles *r* controlled by a valve *t* and a perforated slide *s* which can be adjusted by a screw.

**1381. Miller, E.** Jan. 18.

Asphalts.—Tar concretes or artificial asphalts for road-making, foundations, and other purposes are made by impregnating the broken stone, cinders, &c. with mineral oil, such as creosote oil, oil of tar, crude petroleum, petroleum residue, &c., previous to mixing with tarry or pitchy matters.

1646. Collos Portland Cement Co.,
[Colloseus, H.]. Jan. 22.

Slags, treatment of.—In the manufacture of slag cement by treating molten slag with alkalis or their salts, the alkalis &c. in solution are injected into the stream of molten slag. The apparatus described in Specification No. 14,329, A.D. 1905, may be employed, the molten slag being run upon the surface of a revolving drum or cylinder, through perforations in which the salt solution is forced. The amount of alkali &c. used depends upon the basicity of the slag.

1647. Collos Portland Cement Co.,
[Colloseus, H.]. Jan. 22.

Slags, treatment of.—Slag cement is manufactured by injecting into the molten slag a solution of a salt of iron, chromium, nickel, manganese, &c. A cement thus made effectually resists the action of sea-water. The apparatus described in Specification No. 14,329, A.D. 1905, may be employed.

2442. Laeuffer, J. Jan. 31, 1906, [date applied for under Patents Act, 1901].

Stone, artificial; fire-proof compositions.—A composition consisting of vegetable matter, such as sawdust, straw, stall refuse, corn stalks, or tan bark, with Portland cement, plaster of paris, and swine blood, and with or without sulphur, sugar, or oil, is used as a wood or stone substitute. The composition is fire-proof, a non-conductor of heat and electricity, and practically waterproof. The blood is aged before use, and a mixture of creosote and paraffin may be used to coat the moulded blocks. The Specification in the original form as published under the Act of 1901 describes also the addition of small quantities of animal hair and cream-floated barytes. This subject-matter does not appear in the Complete Specification as accepted.

2460. Brookes, A. G., [Asbestos Wood Co.]. Jan. 31.

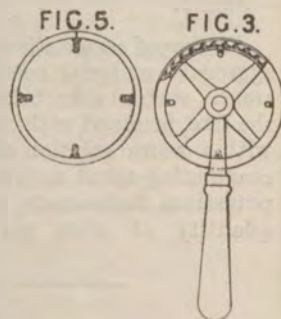
Fire-proof coverings and compositions; refractory substances.—A refractory material is prepared by submitting a wet mixture of finely comminuted asbestos fibre &c. and finely divided magnesium oxide to great pressure in moulds while hydration is in progress. A suitable mixture consists of 80 per cent of finely comminuted serpentine rock, with or without larger fibres of asbestos, and 20 per cent of magnesium oxide. The wet mixture is moulded under a pressure of from 1500 to 2500 lb. per square inch. After the initial "set" has taken place, the blocks are allowed to harden in a setting-press under a comparatively light pressure.

2605. Charles, A. March 1, 1906, [date applied for under Patents Act, 1901].

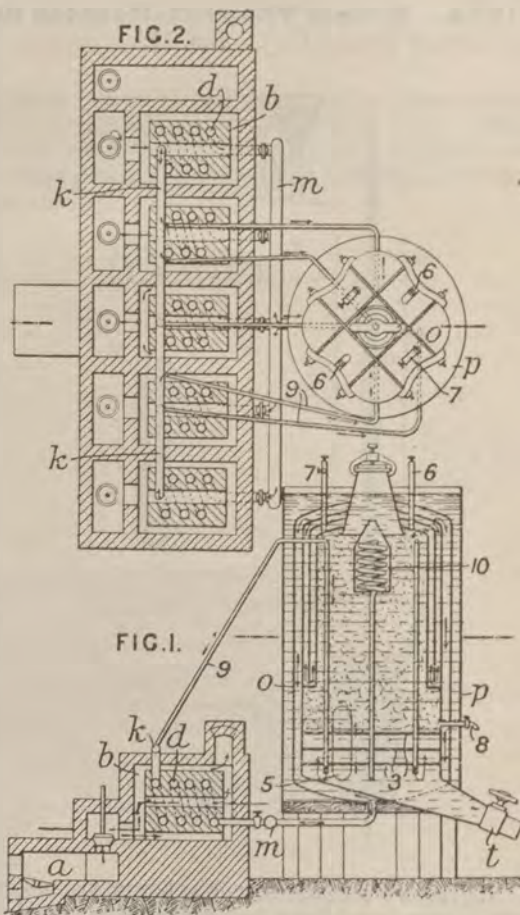
Stone, artificial; concretes; stone, hardening.—Sand-lime blocks, facing bricks, slabs, and tiles for building and paving purposes are manufactured from a mixture containing more than 10 per cent of lime, the whole being crushed so as to pass through a sieve having at least 900 meshes to the square cm. The mixture is compressed under a pressure of at least 700 kilos per square cm. and is hardened under a steam pressure of at least 12 atmospheres. The Specification in the original form as published under the Act of 1901 comprises also the embedding of vertical metal pins or studs in the blocks. This subject matter does not appear in the Complete Specification as accepted.

2685. Günther, B. Feb. 2.

Stonework, ornamental.—In moulding stucco work in situ, the fine portions are applied in strips by means of a grooved roller, and are impressed with the required design by a similarengraved roller, Fig. 3. Both operations may be performed by the engraved roller, which may have detachable rims split, as shown in Fig. 5, so as to be sprung into place and secured by wedges, screws, &c. The main portions of the stucco work are then applied or moulded in place by hollow moulds stamped from sheet metal and coated internally with varnish or linseed oil.



2994. Karyscheff, A. A. de. Feb. 6.



Refractory substances.—Relates to the manufacture of (1) artificial spinels, (2) an agglomerant from plant tissues, a special boiler being described for making the same, and (3) heat, acid, and alkali

dered 35 parts and crushed 12, artificial spinel, powdered 78 and crushed 70, agglutinant 16, boracic acid 0.35, naphtha residue 1, boiling water 6, calcium fluoride 0.50, lamp black 0.15. When used for lining furnaces, 5 per cent of iron protoxide is added and 2½ to 3 per cent of zinc oxide, and the quantity of boracic acid is increased. Hollow articles and bricks are made from somewhat similar compositions.

Asphalts.—A substitute for bitumen is obtained by mixing 97 to 92 per cent of a special pitch with 8 to 3 per cent of a dry powdered high-grade clay, free from grit, such as kaolin, China-clay, fire-clay, potters' clay, porcelain clay, and ball clay. The pitch is obtained by arresting the distillation of tar so that it may contain 55 to 65 per cent of the volatile matters, or by adding solvents to ordinary pitch. This material may finally be mixed with the usual fillers employed in asphalt manufacture, or with suitable fluxes, and is applicable to paving, electric insulation, &c.

FIG. 3.

FIG. 1.

Casting.—Relates to casting cement pads for holding bristles and fixing the pads in recessed brush backs. Cement is run into a mould the bottom of which consists of a frame 1, Fig. 3, filled with bristles and the sides of a pair of tongs 11, Fig. 1. The frame 1 is held in a second frame 3, Fig. 1, hinged at 4 and held together by a catch 5. This frame slides in a third frame 14. The position of the tongs 11 is fixed by adjustable stops 6, 9, 10. Cement is poured into the mould, and as soon as it is somewhat set the tongs are removed and a recessed back 12, Fig. 3, is placed on the pad 20. Adjustable stops 7, 8, Fig. 1, as well as 6, 9, 10, keep the back in position. Pressure is then applied and the pad is forced home by an upstanding part 22, Fig. 3, of the bristle frame. Superfluous

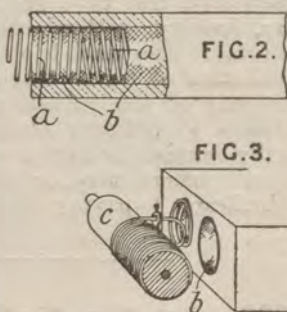
cement escapes and is cut off between the parts 19, 22. When finished, the level of the outer surface of the pad is lower than that of the adjacent brush back.

3294. Müller, A. Feb. 9.

Cements; slags, treatment of.—A cement is obtained from highly basic blast-furnace slag by introducing barium or strontium salt solutions, or a mixture of them, into the molten slag; the aqueous solvent then evaporates and a reaction between the slag and salt produces a cement ready for use.

3344. Wilhelmi, O., and Oberlies, W. Feb. 11.

Casting.—Helical coils *a* used as cores for producing channels in hollow blocks, floors, walls, ceilings, posts, pipes, conduits for electric cables, &c. from concrete mortar, clay, &c. are made of wire which is wound upon a rotating mandrel *c*, Fig. 3, as it is withdrawn from a finished block &c. so as to form another core. In use, the core is surrounded by a tube *b* of paper applied either in the form of a sheet or as a helical strip, and this tube is left in the finished channel. In channels for electric cables, the tube forms an insulating-layer.



3404. Newberry, S. B. Feb. 11.

Cements.—In order to render it permanently impervious to water, Portland cement is mixed with

a small percentage of an insoluble lime salt of a fatty acid, preferably the stearate, which is substantially free from glycerine or other soluble substances. The stearate may be made in any suitable manner; in one method, 50 lbs. of lime are slaked in 100 lbs. of water and, while hot, about 30 lbs. of stearic acid are added. The stearate, with more or less hydrate of lime, is dried and ground with the cement clinker, or may be added to the finished cement, one per cent of the stearate being sufficient to render the cement impervious to water.

3530. Sani, B. Feb. 15, 1906, [date applied for under Patents Act, 1901]. Drawings to Specification.

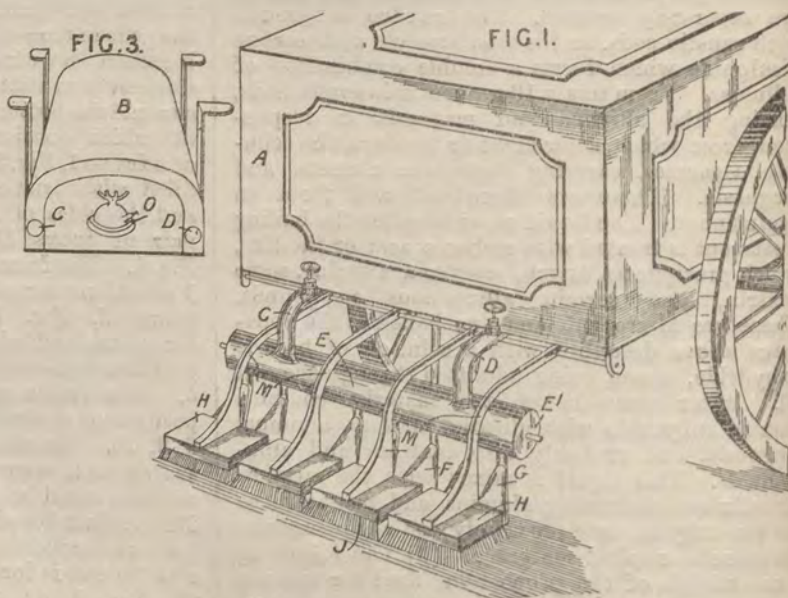
Concretes.—In reinforced concrete sleepers, such as those described in Specification No. 2567, A.D. 1907, [Abridgment Class Railways &c.], the concrete is made of cement, sand, and crushed volcanic stone such as puzzuolana, lava, or trachytes, preferably in the proportions of 2, 3, and 1.

3916. Woodard, C. E., and Thomlinson, J. A. Feb. 16.

Concretes; fireproof and sound-deadening coverings and compositions.—A fire-proof and sound-resisting building-composition for making walls, ceilings, &c. consists of gypsum or other suitable fire-proof binding-material, and porous, glassy, and hollow globules of slag produced by the process described in Specification No. 28,256, A.D. 1902, or by other dry methods of granulation.

4100. Metcalf, J. W. Feb. 19.

Asphalts, heaters for. An ordinary watering-cart is adapted to be used for spreading tar on roads &c. The tar is contained in the tank *A* of the cart and is heated by passing through a heater *B*. From the heater it flows to the distributing-outlets at the rear of the cart. The heater *B* is saddle-shaped and is suspended from the tank and heated by the lamp or fire *O*. The tar passes from the tank to the top of the fore end of the heater by a feed-pipe, which is bolted round a hole in the bottom of the tank and is fitted with a stop valve with a long spindle to be operated from the side of the cart. The feed-pipe



may have a side flushing-pipe for cleaning it out with paraffin.

4530. Coles, S. O. Cowper-. Feb. 23.

Cements.—Slag cement is made by breaking up slag, mixing it with chalk or lime, and melting it in an electric furnace, such as that described in Specification No. 596, A.D. 1907, [*Abridgment Class Electric lamps &c.*]. The molten slag is run from the furnace on to a revolving disk, and at the same time it is treated with steam

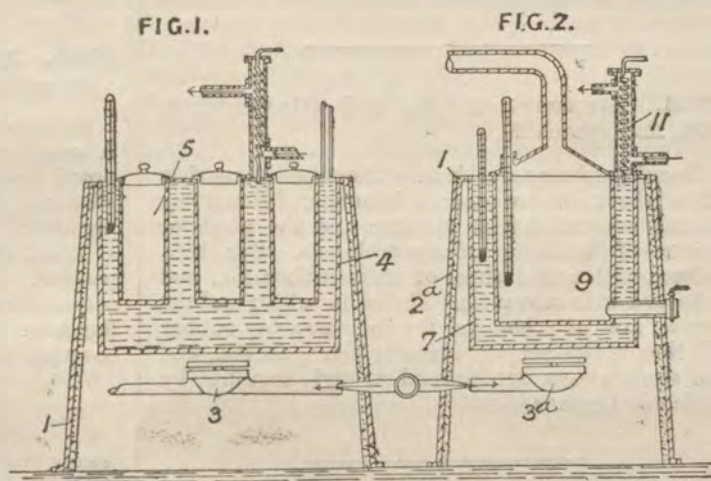
which pulverizes it and converts the sulphur into sulphuretted hydrogen.

4980. Jacquet, J. March 1.

Cements.—A cement or mastic consists of gum lac, turpentine, alum, cerasin, beer-paste (a mixture of beer and glue), bees-wax, boiled linseed oil, sulphur, stearin, tar, carbon bisulphide, and camphor. The solid materials are ground together, heated, and mixed to form a dough. The liquid constituents are added and the mixing is continued. The composition is placed in moulds and allowed to remain until solidified. The composition may be coloured with ochre.

5075. Klausner, O., [Colonia Apparatebau Ges.]. March 2.
No Patent granted (Sealing fee not paid).

Casting.—In casting wax &c. the moulds are heated in chambers 5 placed in an oil-bath 4, which is enclosed in an air-tight insulated casing 1 and heated by means of a burner 3. The wax &c. is heated in a boiler 9 placed in a similar oil-bath 7, enclosed in an air-tight casing 2^a and heated by a burner 3^a, the heat radiated from this burner serving also to superheat the outlet cock from the boiler 9. In order to maintain the oil-baths at a constant temperature, they are fitted with condensers 11.



5128. Lake, C. S., [representative of Lake, H. H.], [Pradel, G. J. L.]. March 2.

Cements.—Peat is digested under pressure with dilute sulphuric acid so as to saccharify the gummy and starchy matters in the peat without saccharifying the cellulose. The mixture is neutralized with calcium carbonate, or with the mud occurring at the bottom of many peat beds which contains calcium carbonate, clay, and sand, and also small quantities of phosphoric acid, magnesia, and nitrogen, which will serve as a yeast food. The material is cooled to 35° C. and fermented either with ordinary yeast or with yeast obtained from the berries growing on peat bogs. A part of the fermented liquid is decanted and is used for the digestion of a further quantity of peat, the acidity of the liquid rendering a smaller addition of acid necessary. The vapours of alcohol, and of ether formed by the action of the acid, and the aromatic vapours from the peat which are evolved from the digester are condensed. The remainder of the fermented liquid containing the solid matters is distilled to separate the alcohol, and is then filtered. The solid matters are dried and subjected to dry distillation. The nitrogen in the substance forms ammonia which is collected as ammonium sulphate,

and the tars, gases, paraffins, and wood spirit are collected. The residue, chiefly consisting of calcium sulphate, is employed as a plaster, or is mixed with clay as a cement or as an agglomerant.

6070. Hales, A. March 13.

Mortars.—A material for use as a substitute for sand for building purposes consists of a mixture of 40 per cent of clinkers or cinders and 60 per cent of broken brick refuse, intimately ground together.

6305. Hutchinson, J. March 15.

Asphalts.—Broken-stone roads having a bituminous matrix are made (1) by avoiding the use of dust or like finely-divided material in the matrix, (2) by using coal-tar from which the volatile oils have been removed, and (3) by applying the matrix as a bottom layer to be forced upwards into the voids of the road metal by rolling. The matrix is made by coating the small particles of stone, slag,

or clinker, which have been previously heated, with the hot prepared tar, having a gravity of 1.23-1.27, with or without an addition of pitch, which may be fluxed with anthracene oil. After the completion of the rolling, the surface may be painted with the tar cement, dry stone chippings being immediately afterwards spread and rolled therein.

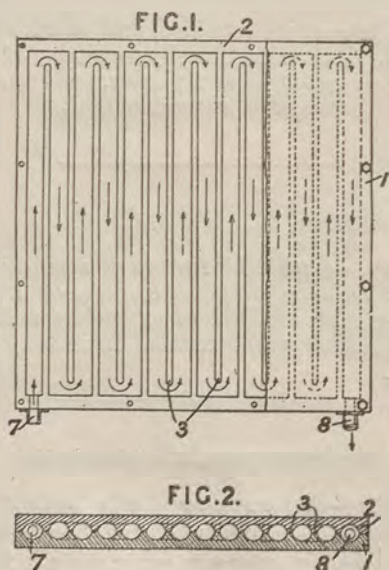
6475. Ziegler, J. J. March 18.

Fireproof coverings and compositions.—The lathing or other material used for fixing plaster upon girders, struts, beams, &c. is soaked in magnesium chloride solution and dried, after which it is immersed in a solution of silicic acid. The material is then fixed in position and covered with plaster in the usual manner.

6708. Beaver, C. J., and Claremont, E. A. March 20.

Sound-deadening coverings.—The covering consists of a sheet of vulcanized bitumen, formed by mixing mineral matter, sulphur, and the pitch or residues of distillation of vegetable oils. The sheet is faced with a thin sheet of india-rubber &c., and is backed with canvas &c. The india-rubber and the canvas are attached to the bitumen by rubber solution, gutta-percha, cement, fish glue, &c., and the three sheets are pressed strongly together by mechanical means.

6726. Imray, O., [Jacobi, A.]. March 20.



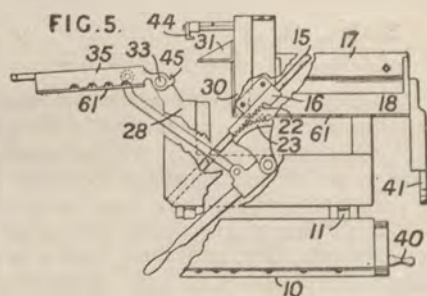
Casting.—Cooling-frames for use in setting soaps, coco butter, margarine, &c. are constructed after the manner of filter-presses, of two ribbed plates 1, 2 fitting together so that their ribs abut, as

at 3, to form ducts for water &c., alternate ribs not being carried quite to the top or bottom, so that there is a passage from one vertical duct to the next. The water inlets 7 and outlets 8 are at the bottom of the frame. In one modification, the ribbed plates are separated by a metal sheet perforated to allow the cooling-water to pass from one side to the other. In a second modification, outside plates are bolted to a central plate ribbed on both sides to form ducts and perforated to establish communication between the ducts, which may be horizontal or vertical. To facilitate detachment of the soap, the surfaces in contact therewith are of mirror-like smoothness; and for this purpose they may be plated with nickel electrically deposited or other otherwise applied; or plates of nickel may be attached to the cooling-plates.

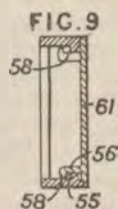
6755. Plönnis, R. May 2, 1906, [date applied for under Patents Act, 1901].

Cements; fire-proof coverings and compositions.—A weather-proof, fire-proof, and alkali- and acid-proof paint is composed of water-glass, strong alkaline lye, cement, and a mineral or metal pigment. The spreading qualities are increased by a small addition of varnish, linseed oil, or turpentine. The paint, when in a state of greater consistency, may be employed for pasting-down linoleum &c., for cementing purposes, and for covering floors &c.

6954. Tower, W. G. March 22, 1906, [date applied for under Patents Act, 1901].



Casting.—L-shaped concrete blocks are cast in a mould comprising a base-plate 28 and sides consisting of frames 18, 30, 31, 35, and 10. These skeleton frames are hinged to the plate 28, vertically at 11, and horizontally at 33. The base-plate 17 carrying the other sides is supported on a block 16, which is slid by means of a rack and pinion 22, 23 along a diagonal shaft 15, the movement that brings the base 17 into and out of position serving to turn the frame 35 about its hinge. In the assembled



position, latches 40, 44 engaging notches 44, 45 serve to hold the parts of the mould firmly together. By using an auxiliary base-plate, the angle of the block can be varied, and division plates can be used with notches engaging recesses in the facing-plates 61 carried by the side frames. These plates 61 are interchangeable and are preferably slid into position, being provided, as shown in Fig. 9, with hooked projections 56 engaging rails 55 on the side frames; wedges 58 are employed to make the junction secure.

7037. Belloni, E. L. June 21, 1906, [date applied for under Patents Act, 1901].

Stone, colouring.—Marble is coloured by treating it successively with salt solutions, such as a copper salt and an alkaline ferrocyanide, the penetrating powers of which increase, according to the place occupied by them in the colouring-process, that is to say the second solution has a greater penetrating-power than the first one, the third greater than the second, and so on. The penetrating power may be adjusted by altering the concentration, since in general the two increase together. A very high concentration of a particular acid or basic radical, for example ferrocyanogen, may in general be obtained by making a concentrated solution of one compound containing the radical and then adding a second compound containing the same radical.

7150. Bloxam, A. G., [Soc. Anon. des Usines Remy]. March 25.

Fire-proof coverings.—Light textile fabrics are glossed and rendered unflammable by treatment with a finish having as a basis rice starch, for example alkaline rice starch, and in addition mono-basic and tri-basic ammonium phosphates, ammonium sulphate, and talc, with or without borax and boric acid. The fabric is rough-starched with this mixture, gently heated with a suitable quantity of water to about 50° C., removed from the bath (to which excess of the finish is returned), wrung out, and dried. The bath is meanwhile heated until boiled starch is produced, and the fabric is starched again and ironed while very slightly moist.

7179. Schlentheim, L., and Diespeker, Ltd. March 25.

Cements.—A composition is formed by mixing together asbestos powder or other equivalent silicate, calcined magnesium carbonate, and flour of wood, or the like, in any desired proportions, for example in about equal proportions, together with any suitable colouring-matter. To the powdered mixture is added a solution of magnesium chloride, and it is then used as a plaster, or is formed by moulding into blocks or articles which may be machined to suitable shapes. The material can be used for floors, walls, dadoes, skirtings, rails, steps, or banisters.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specifications No. 7304, A.D. 1884, and No. 29,865, A.D. 1896.]

7742. Coles, S. O. Cowper-. April 2.
Drawings to Specification.

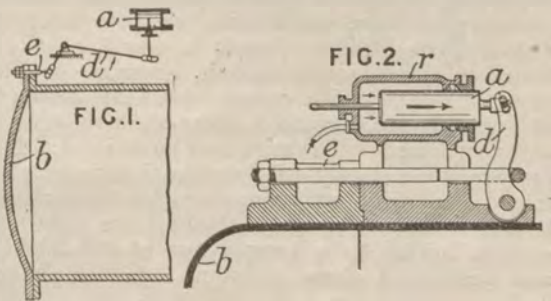
Cements.—Cements for general building purposes are prepared from furnace slag by melting the slag on the sloping hearth of a reverberatory furnace, from which it flows between two electrodes and is electrolyzed, so as to drive off the sulphur.

8275. Arnold, J. April 9.

Asphaltes.—A compound for application to the surfaces of roads, paths, &c. to render them dustless, which may also be applied to the walls of buildings, or used for building sea-walls or groynes, and for making bricks, slabs, or tiles, consists of a mixture of basic slag and cement together with tar or pitch or a liquid asphalt, a little chalk and sand being added if desired. The slag is ground and mixed with the tar or pitch, which is previously heated to 200–210° F. The mixture is further heated to 230–250° F., and while hot, the cement is added and mixed. Ground chalk may then be added and finally the sand. In moulding slabs, tiles, &c., they may be reinforced by any suitable wire frame and pressure may be applied to the compound. In applying the compound to a road, the frames are placed in situ and the compound poured into the frame. Slagwool may be employed instead of the basic slag.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specification No. 3429, A.D. 1893, [Abridgment Class Roads &c.].]

8473. Stöffer, E. April 11.



Stone, natural and artificial, hardening and preserving.—Relates to means for tightening the bolts used for holding-down the covers *b* of pressure vessels, such as the hardening-vessels employed in the lime-sandstone manufacture, and consists in providing each bolt with a lever, which is pivotally secured to the pressure vessel and to a small pressure piston. Fig. 1 shows a bolt *e* with bell-crank lever *d* connected with the piston of the small pressure vessel. Fig. 2 shows the axis of the small pressure piston *a* parallel with the axis of the larger vessels, the pistons being arranged in a hollow ring *r*. The bolts *e* are tightened through the levers *d*.

9300. Wilkins, G. W. April 22.

Fire-proof coverings and compositions.—A fire-proofing-solution consists of a mixture of one part of a saturated solution of ammonium phosphate with two parts of a saturated solution of ammonium sulphate. The solutions may be diluted with water. It is applicable for the treatment of cotton, woollen and silk goods, paper, cheques, wood, hemp, jute, sacks, flannelette articles of clothing, theatrical scenery and effects, and the linings and parts of buildings. In making-up starched goods, the solution may be added to the starch.

9375. Flynt, H. S. April 23.

Asphalts.—A substitute for asphalt for covering floors, walls, roadways, &c. is made by mixing limestone, sand, or other earthy matter with resin and petroleum residuum. To 80-90 parts by weight of earthy matter, heated to 350-550° F. are added 10-5 parts of oil and then 5-10 parts of resin, the mixture being thoroughly stirred. Colouring-matter and non-slipping material such as sawdust, cork, &c. may be added.

9397. Pont, S. de. April 23.

Fire-proof compositions.—A non-inflammable electric insulating-composition, also suitable for the manufacture of buttons, bottle stoppers, pianoforte keys, &c. is made of the following materials, preferably in the proportions stated, namely: asbestos, wood pulp, or any vegetable fibre 30 parts, plaster of paris 5, clay 8, copal 15, kauri or lac 5, pitch, asphalt, bitumen, or like material treated with carbon bisulphide or spirit of benzoline 15, aniline 2, lamp-black 13, mica 4, and wax 3 parts. The mica may be omitted. The ingredients are partly dried and are then thoroughly mixed and dried under pressure between steam-heated rollers. The slabs obtained are placed in moulds, heated to a temperature of 250-300° F., and pressed at three to four tons per square inch.

9633. Thom, T. M. April 25.

Stone, artificial; stone, artificial, hardening and preserving.—Relates to the manner in which carbonic acid is used in treating blocks formed by mixing stone or marble chips or blast-furnace slag or mixtures thereof with lime, and slaking and moulding. The blocks are placed in a closed vessel, and the air is exhausted therefrom. The carbonic acid is then admitted first at a pressure considerably below that of the atmosphere, and

this pressure is gradually increased until it is considerably above atmospheric pressure.

10,030. Adda, L. d'. April 30. *Drawings to Specification.*

Concretes.—Armour for ships is made from a concrete consisting of a mixture of cement with an aggregate comprising, in combination, sand or its equivalent and a coarse material. A suitable composition for the concrete comprises 1 volume of Portland cement, added to 1½ volumes of silicious river sand, and 4 volumes of calcareous stone.

10,064. Coward, W. H. April 30.

Asphalts.—The known lime-bitumen compositions are improved by slaking the lime after admixture with the bitumen, tar, or other bituminous matter in a moist atmosphere. Limestone or other calcareous material is burnt and ground with the bituminous matter, such as bituminous shale, and the mixture is formed into sheets and exposed, preferably by being placed on a perforated floor, to a moist atmosphere. The mixture disintegrates and falls through the perforations. The composition may be manufactured into building-blocks, paving-slabs, &c.

10,065. Coward, W. H. April 30.

Asphalts.—A mixture of stone or slag and a bituminous composition, consisting essentially of asphalt or equivalent bituminous material and slaked lime, prepared in the manner described in Specification No. 10,064, A.D. 1907, is employed in the manufacture of waterproof paving-slabs, building-blocks, roof coverings, and electric insulators. Quicklime is ground to a thick paste with the bituminous material, and the product is rolled into sheets, which on being exposed to a moist atmosphere crumble to a fine powder. The stone, before being mixed with this powder, is heated and treated with a bituminous liquid, liquid tar, or the like. Bricks made from this mixture are passed through tar or the like, and are finally delivered to an hydraulic steam-heated press capable of exerting a pressure of 2,000 lb. per square inch.

10,243. Schleuning, W. May 2.

Stone, artificial and imitation.—Artificial stone is prepared by mixing water-glass with chalky slag from blast furnaces. The setting of the mass may be delayed by the addition of chalk, brick-dust, fine sand, or the like, or hastened by the addition of a small proportion of Portland cement, caustic

lime, or the like. The material may be stamped, cast, or moulded, and may be coloured. It can be used for bricks, balustrades, &c.

10,257. Coles, S. O. Cowper--. May 2.

Cements.—Slag cement is made by mixing 25 per cent of blast-furnace slag, which has been granulated by running it while molten on to a revolving disk and simultaneously treating it with a jet of water, with 75 per cent, more or less, of slag which has been treated by subjecting it, with or without the addition of chalk, to the action of an electric current so as to reduce it to a fluid state, and then bringing superheated steam in contact with the electrolyzed slag to desulphurize it.

10,366. Coles, S. O. Cowper--. May 3.

Cements.—Relates to an improvement on the

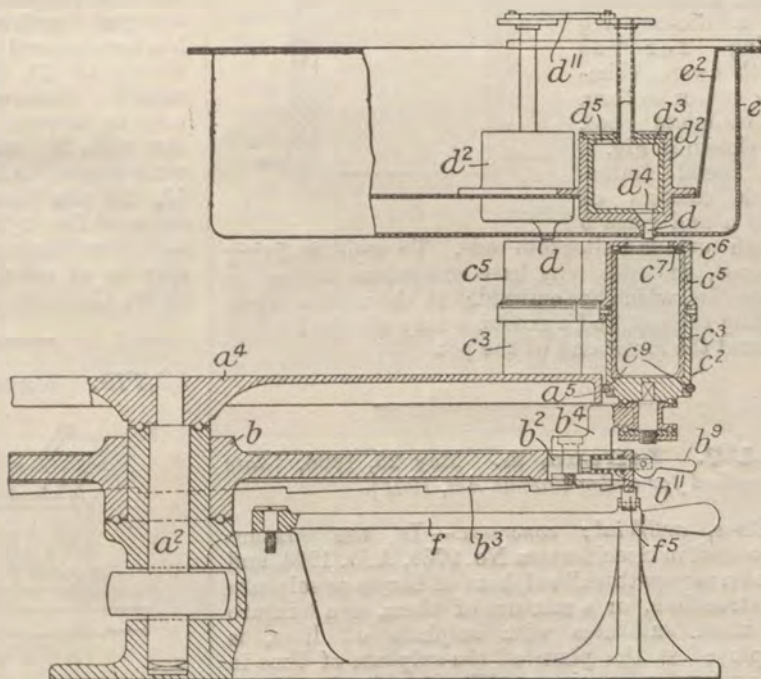
invention described in Specification No. 22,425, A.D. 1906. Slag or clay mixed with calcareous matter is, if desired, fused in a furnace, and is then raised to a higher temperature by an electric current, the fused mass being run into cold water.

10,699. Marriott, T. May 8.

Asphalts.—Soft petroleum or like pitch, obtained by arresting the distillation of petroleum when the volatile constituents amount to from 64 to 66 per cent, is mixed while hot with from 3 to 4½ per cent of kaolin or like clay for producing an asphalt substitute. During the process of manufacture, a further quantity of soft pitch or of kaolin may be added in order to give the requisite consistency, and also resins, waxes, or the like. Wood pitch, palm-oil pitch, or the like may be used instead of petroleum pitch. Specification No. 3063, A.D. 1907, is referred to.

11,230. Wee, E. van der. May 14. *Grant of Patent refused.*

Casting.—Cylindrical records and record-blanks are moulded by centrifugal force, the rotary motion being obtained by frictional contact with the driving-disk. On a vertical shaft a^2 is secured a disk a^4 so that its rim a^5 frictionally imparts rotation to a ring c^9 of rubber, on one of a number of vertical moulds c^3 within carriers c^2 . Below the disk a^4 and on the same shaft is another disk b , or it may be a number of radial arms having arranged at the periphery a series of slots b^2 corresponding in number to that of the moulds employed. The disk b also carries the same number of teeth b^3 which are adapted to be engaged by a pawl f^5 carried on an horizontally operable arm f to enable fresh mould-carriers to be brought to the filling position. In each of the slots b^2 , a bracket b^4 supporting the mould-carrier can be made to slide by a cam-lever b^9 and spring b^{11} , whereby the mould-carrier is brought into contact with the driving-disk and rotated. The mould-carrier c^2 firmly holds the mould c^3 by a cap c^5 attached by a bayonet-joint to the lower portion c^7 , a spring washer c^4 , and a plate c^6 . The wax, heated in a container e^2 by applying heat between the walls e^2, e , passes through a hole d^5 into the measuring-devices d^3 in the container, and through a hole d^4 and nozzle d into the rotating mould. The inner



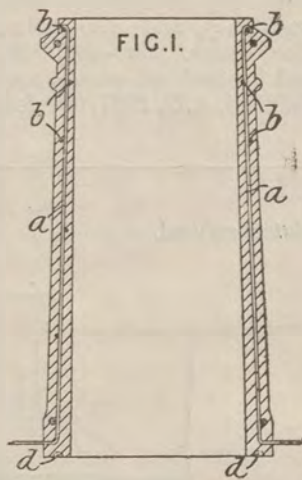
portions d^3 of the measuring-devices are adapted to rotate to cover and uncover alternately the holes d^4, d^5 , and these two portions are pivoted together by a rod d^{11} , so that when one measure is discharging into a mould the other measure is being filled from the container. After each mould receives its charge, it is rotated until cool, independently of the other moulds.

11,498. Marriott, T. May 16.

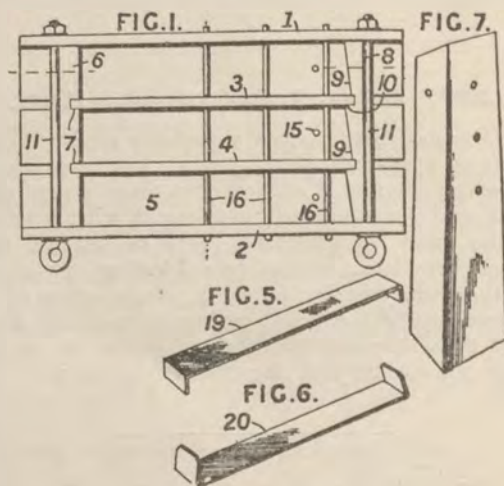
Asphalts.—A mixture of tar, preferably refined, and kaolin or the like, with or without soft pitch, india-rubber, gutta-percha, and balata, is mixed with pitch or bitumen for the purpose of improving the properties of the latter, particularly to render them applicable as electric insulators. Non-gritty hardeners, such as resin or mineral wax may also be added. According to the Provisional Specification pitches, treated as described in Specifications Nos. 3063 and 10,699, A.D. 1907, may be used, and the product is acid-proof.

11,956. Berry, H. May 23.

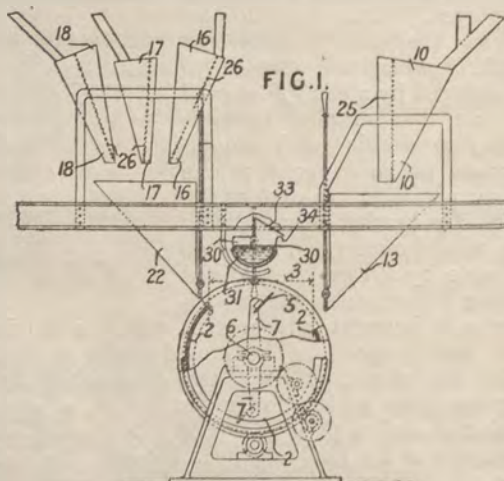
Concretes.—Reinforced concrete consisting of a mixture of two parts of coke breeze, clinker, pottery refuse, or brick-dust with about one part of Portland cement, with or without slag-wool, is used either as a fire-resisting lining for an earthenware chimney pot or to form a complete pot. As shown in Fig. 1, the metal framework consists of rods *a* and rings *b* which surround alternate rods. To assist in fixing the pot, the rods may have extensions, looped or otherwise, which are embedded in the mortar when setting the pot, and a groove *d* may also be formed around the lower end of the pot.

**12,137. Lefranc, L.** May 26, 1906, [date applied for under Patents Act, 1901].

Stone, artificial; concretes.—In the mixture described in Specification No. 9769, A.D. 1904, and known as "spathite," sulphate of baryta or sulphate of strontium, or a mixture of them, or a mixture of these sulphates with sulphate of lime, is employed in the place of the sulphate of lime in the original composition. The Specification in the original form, as published under the Act of 1901, comprises also a concrete in which the pebbles and stones are bound together by the mixture described in the above noted Specification, and reinforced with iron rods when necessary. Blocks or flag-stones are manufactured with mosaic or similar designs by arranging pebbles, stones, &c. at the bottom of the mould. This subject-matter does not appear in the Complete Specification as accepted.

12,565. Burkholder, P. T. Dec. 4, 1906, [date applied for under Patents Act, 1901].

Casting.—A multiple mould for casting fence posts &c. from concrete comprises sides 1, 2 and ends 6, 8. Removable partitions 3, 4 fit into grooves 7, 10 in the end pieces 6, 8 and are also separated by bottom pieces 5. The end 8 is formed with stepped inclines 9 so as to form an inclined upper surface on the posts for drainage and like purposes. The parts of the moulds are clamped together by bolts 11, and after concrete has been poured into the mould spaces, additional clamps 19, 20, Figs 5 and 6, are placed over the mould. Removable metal cores or pins 15, 16 may be inserted into the mould to form holes in the posts for receiving connecting-means or hinge connections. After the material is set, the clamps 19, 20 are moved and the posts released and removed for drying, by removing the cores 15, 16 and disconnecting the bolts 11. The mould parts may be of metal or of metal and wood. Fig. 7 shows the form of a finished post.

12,779. Ward, J. June 3.

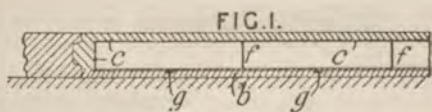
Asphalts.—Relates to an apparatus for making tar paving, in which the tar is specially prepared

and is uniformly mixed with the stone. The tar is first heated, mixed with powdered limestone, and kept agitated in a special vessel until required in the tar distributor 30 placed above the steam-jacketed mixing-cylinder 2, which has a longitudinal opening 3 beneath the stone-supplying hoppers 13, 22. Above these hoppers are a hopper 10 for the largest grade, and hoppers 16, 17, 18 for the various smaller grades, adjustable plates 25, 26 being used to supply measured quantities of stone. The trough-shaped and steam-jacketed distributor 30, hinged at 31, has a cover 33 and curved lip 34, and can be tilted through 90 degrees to supply the tar in a continuous sheet. The mixing is produced by two lines of inclined blades 5 attached to rotating arms 7 on a central shaft 6. Gearing for tipping and emptying the cylinder 2 is described.

13,811. Butchard, G. W. June 14.

Concretes.—Concrete is formed of a mixture of cement or lime and burnt gault. Sand may be added to the mixture.

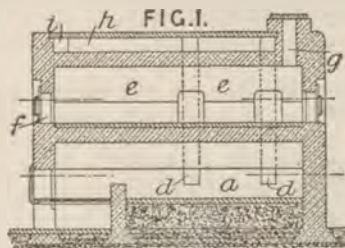
13,931. Cross, T. June 17.



Casting.—In the manufacture of blocks or slabs of plaster of paris, Portland cement, or the like, having a box-like structure *c*, preferably of plaster of paris reinforced with netting, embedded in the

interior, a layer *b* of plaster is first poured into the mould, and when this layer is about to set, the box *c* is pressed into it with the open end downwards, the box resting upon bars *g*, which are inserted in sockets at opposite sides of the mould. The mould is then filled with plaster. When the bars *g* are withdrawn the interior of the box is vented. A closed box may be employed, the interior being vented by means of a small hole pierced by a suitable tool.

14,452. Latham, E. June 22.

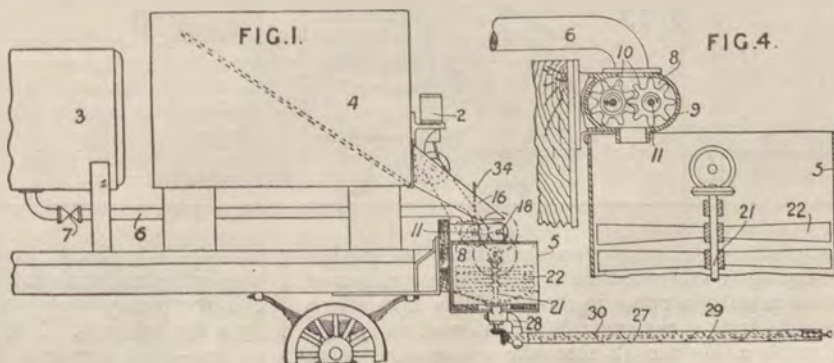


Cements.—Old plaster casts and other hydrated calcium sulphate are dehydrated by heating them to a temperature of 90–140° C. in a small current of air. The product is ground, mixed, if desired, with 5 per cent of fresh plaster, and packed. The form of apparatus preferred is shown in vertical section in Fig. 1, and consists of an oven *e* and a furnace *a*. From the furnace flues *d* pass to flues *h*, *i* which lead to a stack. Air enters the oven door *f*, and after passing over the suitably-arranged casts escapes through the opening *g* into the stack.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specifications No. 9528, A.D. 1885, [*Abridgment Class Stoves &c.*], and Nos. 8475 and 13,198, A.D. 1894.]

14,794. Brodie, J. A. June 27.

Asphalts, apparatus for making. Tar, asphalt, or pitch tempered with oil, and kept at any desired temperature in a tank 3, is led by a pipe 6 and stop-cock 7 to a feeding and measuring device 8, and is mixed in a vessel 5 with sand from a receptacle 4 prior to distribution on roads &c. The device 8 consists of a casing 9 containing

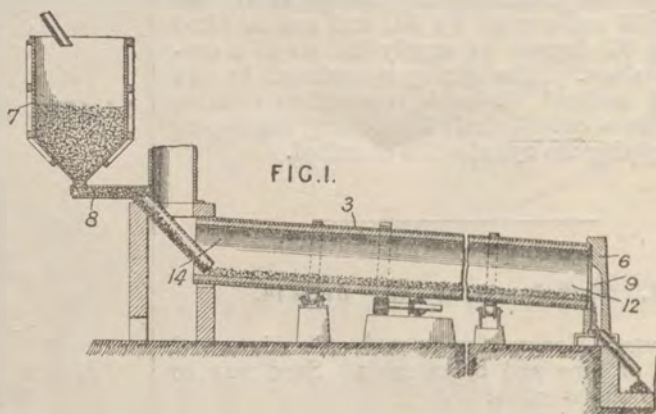


two meshing gear-wheels 10 driven from a motor 2. The sand is fed into the vessel 5 from a shoot 16 with a sliding shutter 34, by vanes mounted on a shaft 18 rotated by gearing from the shaft 11 of one of the wheels 10. The ratio of the gearing may be altered in order to vary the proportion of pitch &c. to sand. Mixing is produced by stirrers 22 on a shaft 21 rotated

by spur and bevel gearing from the shaft 11. A distributing-pipe 27 perforated along its lower surface is carried from an horizontally swivelling elbow-pipe 28 to which the mixture passes from the vessel 5. The mixture is propelled along the pipe 27 by helical brushes or scrapers 30 mounted on a shaft 29 operated by bevel-gearing from the shaft 21, and is spread on roads &c.

15,434. Barnhurst, H. G., and Fuller, J. W. July 4.

Cements.—In producing cement clinker, finely-divided raw cement materials, and finely-divided fuel, both in a dry condition, are thoroughly mixed before being charged into a rotary kiln. The mixture being dry, it remains in a non-cohering condition up to the point of vitrification. Additional fuel may be admitted at other parts of the kiln. In the arrangement shown in Fig. 1, the raw materials and fuel are placed in the bin 7, and are conducted by a conveyer 8 into the end 14 of the kiln 3. The kiln is brick-lined and inclined, and terminates at the discharge end 12 in a wall 6. In this wall is an opening 9 through which primary fuel is introduced. The cement materials being in a finely-divided state fall back from the walls of the rotating kiln, exposing the secondary fuel to the heat of the primary fuel and the warm walls of the kiln.



the alkalis, alkaline earths, or earth metals, such as alum or magnesium sulphate.

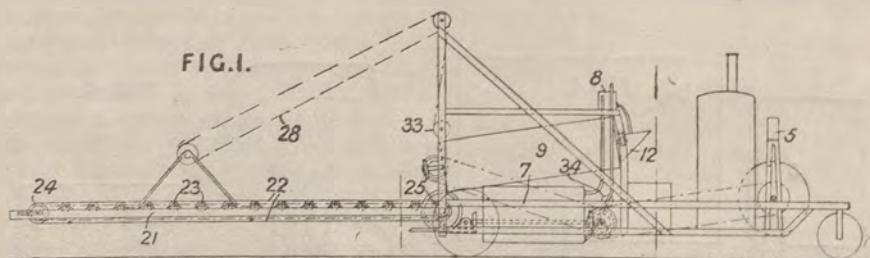
15,764. Collos Portland Cement Co., [Colloseus, H.]. July 9.

Cements.—Relates to the inventions described in Specifications Nos. 3619 and 13,886, A.D. 1905, and consists in simultaneously treating molten slag with milk of lime and with a solution of salts of

15,765. Collos Portland Cement Co., [Colloseus, H.]. July 9.

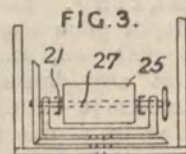
Cements.—Slag cement is manufactured by injecting into molten slag in an atomized condition, as described in Specification No. 3619, A.D. 1905, a solution of the hydroxides of the alkalis, alkaline earths (other than milk of lime), or of magnesium, iron, aluminium, or chromium, or mixtures of them. The pulverized product is then ground. Specifications Nos. 13,886 and 14,329, A.D. 1905, are referred to.

16,812. Symon, G. July 23.



Asphalts.—Relates to an apparatus for mixing and laying-down tarred macadam. The tar, heated by steam or otherwise in boilers 7, is raised by a pump 34 into a reservoir 8. The dried stones are fed from a hopper 12 into the upper end of an

adjustably-inclined revolving cylinder 9 in which they are mixed with tar from the reservoir 8. The cylinder 9 may be steam jacketed or may be heated by a fire below it. The mixture is delivered to an endless-band conveyer 22 running on rollers 23

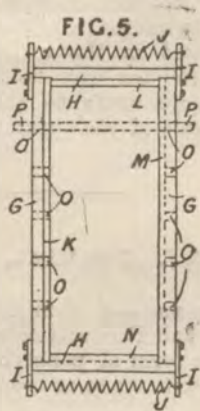


mounted on side frames 21 and round end rollers 24, 25, and is deposited on the road. The mounting of the shaft 27 of the roller 25 is such that the conveyer can be moved by hand through a large horizontal arc. By means of a rope 28 on a hand-rotated drum 33 with pawl and ratchet, the conveyer can also be moved through a small vertical arc. The mixing-cylinder 9, endless-band 22, and pump 34 are actuated from an engine 5.

17,201. Firth, E. July 27.

Cements; casting.—

Building-blocks or slabs having tongued and grooved edges and perforations for grouting are cast from a mixture of 25 parts of the refuse of iron-moulders' sand or castings, 50 parts of the refuse from the flues and interiors of steam and other boilers, 10 parts of the dust from limestone before it is burnt, and 15 parts of the refuse from Parian kilns, water being added to form a thin paste. The proportions may be varied. The slabs are cast in a mould, Fig. 5, comprising side and end members G, H, which are placed upon a flat slab or table, and are provided with projections K, L, and recesses M, N to form the recesses and projections in the edges of the slabs. Cores P for forming the perforations are passed through holes O in the sides G, which are secured together by springs J removably attached to metal projections I. After the material in the mould has set, the cores P are withdrawn, and the sides and ends are taken away separately. Instead of the springs J, metal plates secured to the projections I by screw-threaded nuts may be employed.



17,562. Müller, K. Aug. 1.

Cements.—An hydraulic cement not affected by atmospheric changes is made by adding an alkaline silicate, such as potassium silicate, to the mixture, already known, of calcium sulphate, magnesium sulphate, and magnesia.

17,720. Fabre, L., and Espinasse, P. Aug. 2. No Patent granted (Sealing fee not paid).

Cements.—A mixture of gravel, crushed stones, or sand with a tar pitch or other bituminous

matter, and with or without sulphur, is used for making roads, footpaths, foundations on wet grounds, pipes for water or sewage, &c. The mixture is heated to a high temperature and compressed, while warm, by a paving "beetle," a roller, hydraulic pressure, &c., and allowed to dry, thus forming a waterproofing agglomerate which may be cut into slabs.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specifications No. 24,812, A.D. 1899, No. 13,095, A.D. 1903, and Nos. 3749, 5779, 18,564, and 20,723, A.D. 1906.]

18,101. Wunner'sche Bitumen Werke Ges. April 29, [date applied for under Patents Act, 1901].

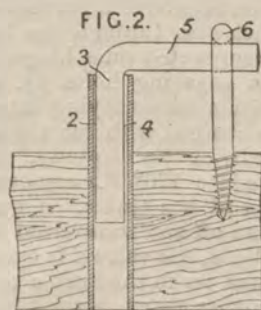
Cements.—A mixture of pitch and heavy coal-tar oils is emulsified by means of alkalis or alkali carbonates, and is then oxidized by means of inorganic oxides, for example, the superoxides of barium, manganese, magnesium, sodium, or lead. The material so treated may be used for electric insulation or when mixed with Portland cement or similar materials for building purposes. Sand and water-glass may also be added.

18,215. Giller, T. Aug. 12. Drawings to Specifications.

Concretes.—Blocks for partition walls are made by compressing a dry mixture of pumice-sand, cement, and ashes, or other suitable substances at high pressure.

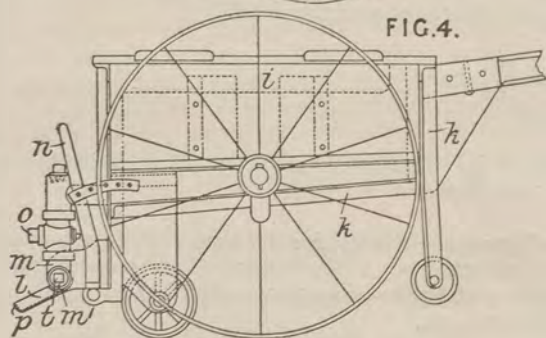
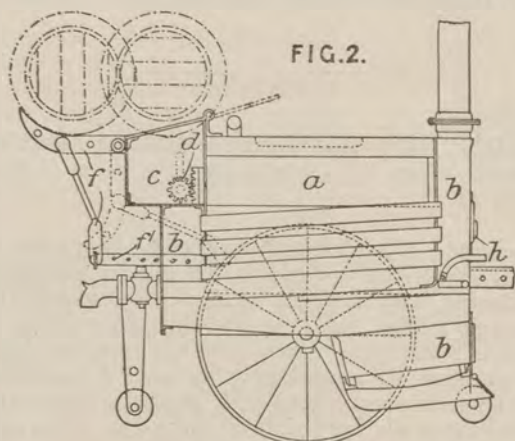
18,253. Bloxam, A. G., [Jacobi, A., (Firm of)]. Aug. 12.

Casting.—Soap frames are provided with vents which are automatically closed when the frames become filled with soap. The vent pipe 2 is fitted with a loose metal rod or stopper 3 in such a manner that air normally escapes through the space 4, but when the space is filled the liquid soap solidifies round the rod 3 and closes the passage 4. A hook 6 engages with a bent arm 5 of the stopper 3 and prevents it from being ejected from the tube 2.



It is stated that the vent may be sealed automatically by making the pipe so narrow that the liquid soap congeals therein.

18,376. Bristowe, F. E., and Stapley, A. Aug. 14, [Cognate Application No. 768, A.D. 1908, dated Jan. 13].



Asphalts.—In dressing roads with tar, the liquid is heated in a wheeled tar boiler of special form, and is transferred to a second wheeled tank provided with special distributing devices. The wheeled tar boiler comprises a reserve tank *c*, Fig. 2, communicating by a valve *d* with a boiler *a* mounted above a furnace *b*, the tubular flues from which pass through the boiler *a*. The tar barrels are supported on a hinged bracket *f* adjustable by pins engaging holes *f*¹, and can be rolled into position for emptying into the tank *c*. The boiler *a* is charged with tar through the valve *d* to two-thirds of its capacity, and the temperature is raised to 176° F., any overflow settling into side trays of the tank *c*. A quantity of the heated tar is run off and transferred to the distributing-tank *i*, Fig. 4, the valve *d* is opened to allow the partly-heated tar in the tank *c* to enter the boiler *a*, and a further charge is run into the tank *c* to ensure a continuous supply. A damper *h* can be used when the temperature rises too rapidly. The distributing-tank *i* is fitted, in order to retain the heat, with a non-conducting envelope *k* the bottom of which can be readily removed to allow the contents to be heated by a firebox or lamp. The

tar passes through discharge cocks *o* to a distributing-pipe *m* with a long opening *m*¹, beneath which is a spreader-plate *l* which can be brought close to the pipe *m* by means of levers *n* in order to regulate the flow. The plate *l* has a turned-up lip *p*, and partitions prevent the liquid from flowing to one end. Division-plates inside the tank *i* prevent unequal flow from the discharge cocks and obviate splashing during transit. The distributing-pipe *m* may have sleeves to slip over the opening *m*¹ to regulate the width of discharge, or may be made readily replaceable by longer or shorter pipes; or in place of it a flexible hose may be attached to each of the discharge cocks *o*. Screwed stoppers *t* serve as cleansing-eyes. Dustless stone chippings may be spread over the freshly-tarred surface. It is stated in the earlier Provisional Specification that the tar may be fed through hose from the discharge cocks to spreader-plates swivelling to each side of the apparatus.

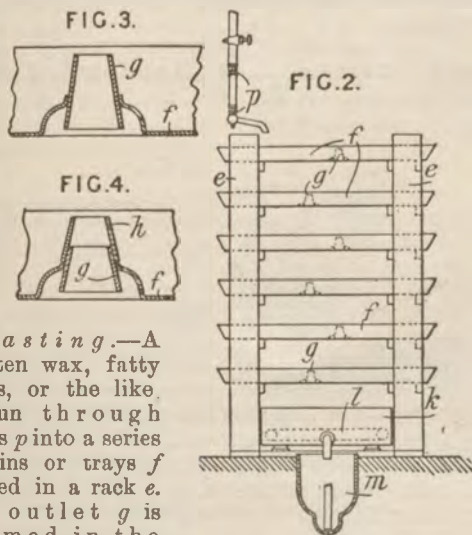
19,523. Jupillat, C. Aug. 31.

Cements.—A composition of plaster, hydraulic lime, and Portland cement is used as a plaster, or in the form of panels or tiles. It may be coloured to imitate stone or brick.

19,629. Stine, M. Sept. 2.

Asphalts.—In order to render wurtzilite or elaterite soluble in the vehicles used in making liquid coating-compositions, the bitumen is heated for some time at 350° C., together with resinous substances, which fuse, but do not decompose at 350° C., and are, after treatment, soluble in the liquid vehicles, as for example, gilsonite or amber. The substances are ground together before heating, or the resinous substances are fused and the bitumen is then added. The vapours given off during the heating are condensed. The mixture after cooling is broken up and dissolved in carbon tetrachloride, tar hydrocarbons, terpenes, resin spirits, chloroform, carbon bisulphide, or petroleum hydrocarbons. The fused mixture may be mixed with a further quantity of bitumen and heated to obtain a soluble product, and this may be repeated three or four times to obtain a soluble product containing a high percentage of wurtzilite in which the high electric insulating properties of wurtzilite may be utilized. Rubber, gutta-percha, easily fusible resin, wax, pigments, &c. may be added to the mixture. A sample coating-composition which gives an acid-proof, highly lustrous coating consists of wurtzilite, which has been fused with gilsonite, turpentine, and linseed or other oil.

19,630. **Bateman, J.** Sept. 2.



Casting.—A molten wax, fatty acids, or the like, is run through pipes *p* into a series of tins or trays *f* placed in a rack *e*. An outlet *g* is formed in the bottom of each tray so that the material after filling the upper trays overflows into those beneath, and finally into a receptacle *k* kept heated by a steam-pipe *l*, whence it passes to a trough *m* and is raised to the supply tank by means of a pump. The outlet *g*, Fig. 3, comprises a conical tube soldered or otherwise secured within a bulged part of the tray so that it does not project below the bottom of the tray. The outlet *g* is arranged nearer one end of the tray, and in use the trays are placed as shown in Fig. 2, so that the outlets of successive series of trays do not aline. The level to which the trays are filled may be varied by means of additional tube sections *h*, Fig. 4, fitting over the tube *g*.

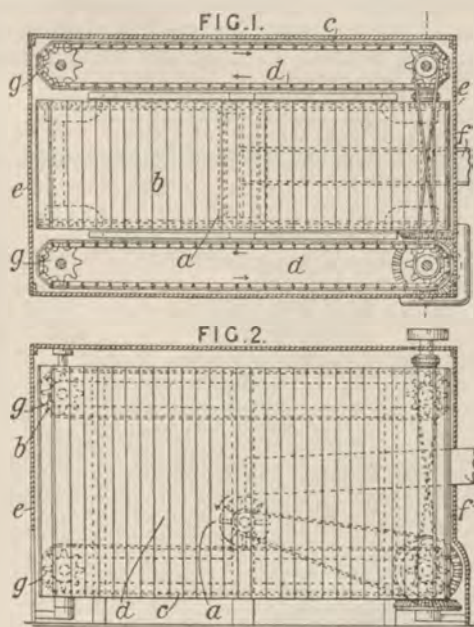
20,378. **Herrenschmidt, H.** Sept. 24, 1906, [date applied for under Patents Act, 1901].

Refractory substances; fire-proof coverings and compositions.—Magnesia and silica, extracted from their ores, or the ores themselves, for example magnesite and quartz, are melted together to a fluid mass in the electric furnace, the proportion of magnesia to silica used lying between the limits of 35 to 65 and 70 to 30, respectively. The homogeneous product is used for fire-proof bricks, industrial pottery, &c.

20,692. **Warren, W. R.** Sept. 17.

Slags, treatment of.—In apparatus for collecting and removing to a desired spot granulated slag or other material, the granulator is enclosed in a chamber having the top and bottom, or the top, bottom, and sides constituted by platform conveyers *b*, *c*, *d*, which are made to travel away from the granulator *a*, or in the same direction as its highest point. At the ends of the space

enclosed between the platforms, one or more stationary or movable walls or platforms *e* may be arranged. The rollers *g* may be placed so as to obtain any desired inclination of the platform.



The moving platforms prevent the accumulation of granulated material in certain parts of the chamber, and effect its removal in a continuous manner to a point where it may be hydrated or aerated and conveyed away for disposal as desired. The granulator is of any well-known form, and may consist of a drum *a* having a corrugated surface, with longitudinal slits through which an aqueous solution of salt is thrown by centrifugal force against the pellets of molten slag or other material. The molten material is fed to the granulator by a shoot *f*.

21,489. **Lake, W. E.**, [Rutgerswerke Akt.-Ges.]. Sept. 27.

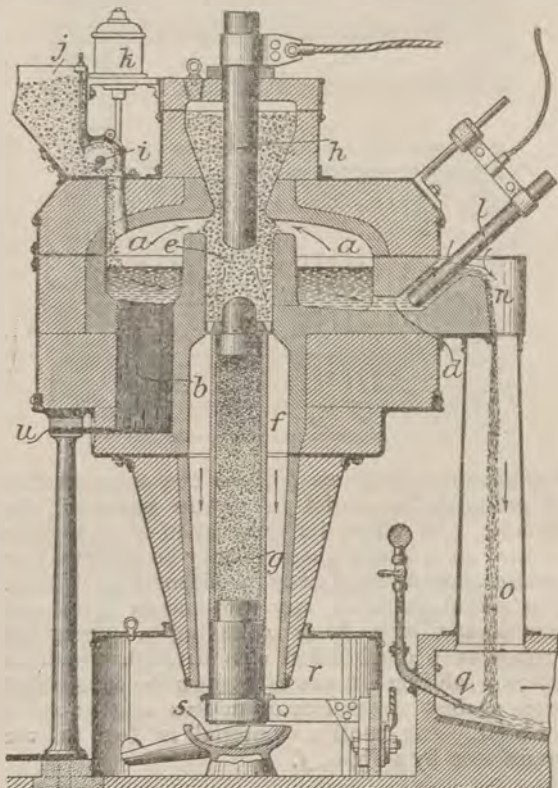
Asphalts.—Melted naphthalene is used for extracting bitumen &c. The extraction may be effected at any temperature between the melting-point (80° C.) and the boiling-point (218° C.) of naphthalene, and is carried out in an open steam-heated vessel. The solution is filtered, and the naphthalene is separated by a current of steam.

21,742. **Paterson, S.** Oct. 1.

Asphalts.—In the manufacture of vulcanized bitumen, the crude liquid obtained by heating the raw material is mixed with a hydrocarbon oil, such as kerosene, which has a boiling-point materially lower than that of the most volatile constituent of the bitumen. The mixture is heated, and a metallic oxide, such as oxide of zinc, is added, which acts in the manner of a flux, producing a

layer of refined bitumen. This refined product is vulcanized by heating it with a mixture of sulphur and a hard wax, such as carnauba wax, the mixture of sulphur and wax having been previously heated. Bitumen treated in the above manner is applicable for use as electric insulation, for the manufacture of paint, waterproof sheeting, and damp courses, and for other purposes.

22,283. Cote, E. F., and Pierron, P. R.
Oct. 9. 28800d



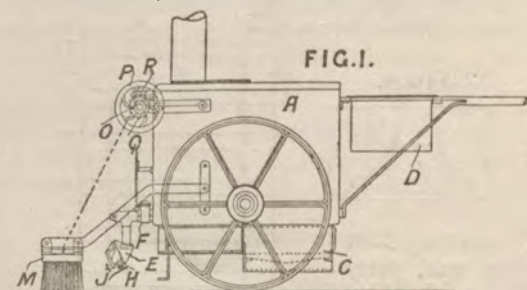
Slags, treatment of.—In an electric furnace for the extraction and distillation of zinc, residual iron sulphide or slag in a spout *d* is kept hot by means of an adjustable electrode *l*, and pours in a thin stream through a box *n* and a hollow column *o*. At the base of the column the slag is granulated by a jet of water from a nozzle *q*. A fan draws fumes from the slag into absorption towers. Specification No. 5100, A.D. 1907, [*Abridgment Class Electric lamps &c.*], is referred to.

22,869. British Thomson-Houston Co.,
[General Electric Co.]. Oct. 16.

Refractory substances.—Purified and fused alumina, known as "alundum," is used as a constituent of electric resistances for heating and other purposes. The alundum may be mixed wet with a binder such as fire-clay and a small proportion of a conducting-material, such as graphite, and optionally with feldspar and flint, the mixture being shaped, dried, and baked at a temperature of 1100°–1300° C. The resulting bodies may be

enamelled. Specification No. 11,146, A.D. 1905, [*Abridgment Class Electricity, Measuring &c.*], is referred to.

23,168. Clarke, J. G., Ashdown, J. W.,
and Weeks, W. R. Oct. 21.



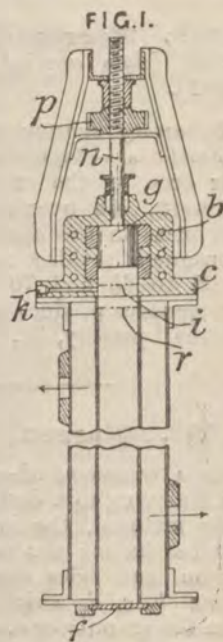
Asphalts.—Tar is heated in a rectangular wheeled tank *A* by means of a furnace *C*, and passes through a number of valves *F* operated either separately or by a common connecting-rod to a distributing-box or spreader *E*, from which it is spread on roads &c. The fuel receptacle *D* is carried between the shafts.

24,052. Müller, R. Oct. 31.

Fire-proof compositions.—To a mixture of asbestos and asphalt or pitch are added oils containing phenol, such as creosote oil, phenol oil, and crude benzol. The mass is finally pressed and baked. The product is an insulator of electricity and heat, and it is proof against fire, water, alcohol, and acid.

24,494. Stockhausen, J., [trading as
Crefelder Seifenfabrik Stockhausen & Traiser],
Nov. 7, 1906, [date applied for under Patents Act,
1901].

Casting soaps. The moulds are fitted with plungers *g* which are adapted to loosen the bars in the moulds preparatory to their discharge by compressed air so as to prevent the formation of cavities in the soap. A slide *f* closes the bottoms of the moulds during casting, and the cover *c* is heated by means of steam passed through coils *b* so as to prevent clogging of the plungers *g* and to fill up the cavities caused by the shrinkage of the soap during cooling. The plungers *g* are carried by screwed rods *n* passing through screwed pinions *p*, which are rotated simultaneously by suitable gearing to depress or raise the plungers. After the moulds have been



filled and cooled, the slide *f* is withdrawn and the plungers *g* are moved down as far as the line *r* to loosen the bars in the moulds. The plungers are next moved back to the position indicated by the line *i*, in which position they close the moulds in an air-tight manner; compressed air is then admitted through pipes *k* to discharge the moulded bars.

24,948. Paschetta, P. A. Nov. 15, 1906, [date applied for under Patents Act, 1901].

Asphalts.—Relates to that method of constructing impermeable surfaces, such as roads, pavements, and side walks, in which a composition consisting of auxiliary materials such as earth, sand, clay, gravel, grit, clinker, &c., previously heated to expel all moisture and coal tar, is laid upon the bed of the road and rolled. According to this invention, the mixture of the auxiliary materials and tar is effected on the spot, and the composition is laid hot upon the road without cooling and reheating. The preferred temperature to which the auxiliary materials are heated is between 175–220° C. Pitch, sulphur, resin, and gum lac may be added to the tar, and cements, lime, and plaster may be used with the auxiliary materials. The Specification in the original form, as published under the Act of 1901, states also that the composition may be used for all building purposes, such as for cellar floors, walls, tanks, blocks for machinery foundations, and concretes for damp places; this subject-matter does not appear in the Complete Specification as accepted.

25,071. Bartels, M. Nov. 12.

Plasters.—A composition for use in the manufacture of stucco-work consists of glycerine, water, gelatine, and a mixture of formaldehyde and talc, to which may also be added potassium chromate.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specifications No. 109, A.D. 1871, [Abridgment Class Cutting &c.], No. 19,163, A.D. 1893, and Nos. 15,534 and 23,056, A.D. 1897, [Abridgment Class India-rubber &c.], and No. 15,907, A.D. 1906.]

25,075. Mansan, R. d'Olivier. Nov. 12.

Cements; mortars.—Pitch of various kinds is heated and mixed with manganese dioxide, dry clay, and plaster of paris to expel volatile hydrocarbons and oils. The product is used with any suitable additions for different purposes, such as paving, road-making, moulding, and building, and for making hydraulic structures, sea walls, drain or other pipes, or tanks, or for other purposes. In one example dry clay, plaster of paris, and manganese dioxide are successively stirred into the heated molten pitch, and a quantity of sand, pebbles, or gravel is then added to form mortar or concrete.

25,605. Grosse, R. Nov. 19. *Drawings to Specification.*

Fire-proof coverings &c.—In making floor covering which is proof against damp, fire, and sound, and can be laid down in sections or continuously, the following materials are used in the stated proportions. (1) 100 parts of cork of the size of a pea, 25 parts of Portland cement, 2 parts of water-glass, and a sufficient quantity of water; (2) 100 parts of cork, 13 parts of magnesite, and a sufficient quantity of liquid magnesium chloride to keep the mixture moist; (3) 100 parts of cork, 15 parts of pitch, and 3 parts of tar. Part of the cork may be replaced by an equal bulk of fibre, wool waste, or slagwool.

25,655. Seemen, E. von. Nov. 19, 1906, [date applied for under Patents Act, 1901].

Refractory substances.—Refractory oxides such as silica, alumina, magnesia, or lime, or compounds of these, are fused with oxides of metals of the iron group, or with titanium oxide, in the presence of oxygen, to avoid contamination by reduction. The products, which are electrically conductive at ordinary temperatures, may be used for heating by electricity or for ceramic purposes. The oxygen may be supplied by an oxidizing-agent, such as saltpetre, or in gaseous form. The mixtures may be natural or artificial, and may contain 15 per cent of iron oxide, 10 per cent of alumina, or 5 per cent of titanium oxide. An electric furnace is preferably used for the fusion. According to the Specification in the original form, as published under the Act of 1901, manganese dioxide and zinc sulphate may be used as oxidizing-agents: the oxides of metals of the iron group or of titanium may be used alone, and the metals may be used and oxidized in the fusion. This subject-matter does not appear in the Complete Specification as accepted.

25,795. Collos Portland Cement Co., [Colloseus, H.]. Nov. 21.

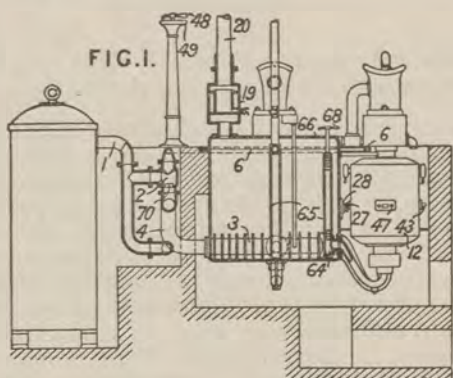
Cements.—The setting-time for low-limed slag cements made on the Colloseus system, such as those described in Specification No. 3619, A.D. 1905, is decreased by adding natural or crystallized gypsum, and is increased by adding to or forming in the cement calcium sulphate. For the latter purpose, calcium hydrate is added up to 1 per cent.

25,969. Potter, C. J. Nov. 23.

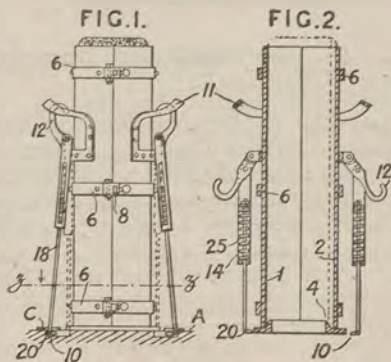
Cements.—A white hydraulic cement is manufactured by burning an intimate mixture of materials which are almost free from iron, for example chalk, China-clay, and finely-ground flint by means of a fuel, such as tar, gas, or oil, which is almost free from iron, and cooling the clinker in a reducing atmosphere.

26,008. Zörn, P. Nov. 23. *Drawings to Specification.*

Cements; plasters.—Wood, metal, brickwork, cement, concrete, or like receptacles, such as cellars, are coated with a mixture of resin or pitch, ozokerit, linseed oil, paraffin, stearin, ceresin, &c., sulphur being added to increase its hardness and accelerate the setting, and ground cork, asbestos, fibre, &c. to increase its cheapness and elasticity. The coating is applied in a hot plastic state.

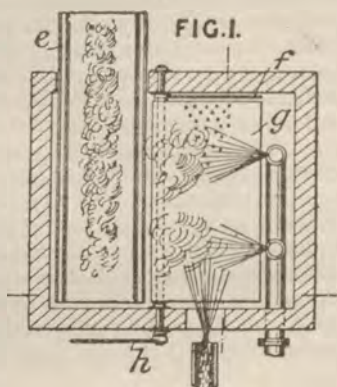
26,835. Schatz, S., [trading as Hoz & Kempter]. Dec. 4.

Asphalts.—In an apparatus for pitching casks, barrels, &c., hot air flows from a stove through radiators 3 in the pitch boiler, which is provided with a condenser 19 and pipe 20. The pitch supply is regulated by a cock 64 connected to a perforated pipe 65, which carries a spindle 66 and pointer 68.

26,989. Adams, E. L. Dec. 6, 1906, [date applied for under Patents Act, 1901].

Casting.—A pipe mould is formed of two sections 1, 2 held together by straps 6 and clamps 8 and resting upon a pallet 4. The mould is held during the formation of the pipe by means of links 18 carrying projections 20 which engage with slotted plates C secured to the floor A; the links 18 are connected through spring devices 25 to members 14

pivoted to hooks 12 hinged to the mould sections, these hooks being adapted to engage with members 11 as shown in Fig. 1. In forming a pipe the members are assembled as shown in Fig. 1, a core is inserted, and plastic material is introduced into the mould. The links 18 are then forced inwards as shown in dotted lines, causing members 10 fixed to the links 18 to engage with the under surface of the pallet 4 and clamp the mould and pallet together. The mould is then removed for the drying of the pipe, after which the hooks 12 are turned down as shown in Fig. 2 to release the pallet 4, and the clamps are released and the mould sections disconnected.

27,172. Ingham, W. P. Dec. 9.

Slagwool, preparation of.—In apparatus for blowing slagwool, in which a cross-current of air is utilized to separate the wool and shot, a conveyer e is employed at one side of the main current to receive the wool, and a hinged plate g directly below to receive the shot. The shot strikes against a plate f, falls on to the plate g, and is at intervals discharged into a shoot by means of a handle h.

27,213. Willax, K. Dec. 9.

Casting.—Coffee extract mixed with sugar is boiled to a syrup and poured into moulds, which are preferably dusted with rice-flour &c.

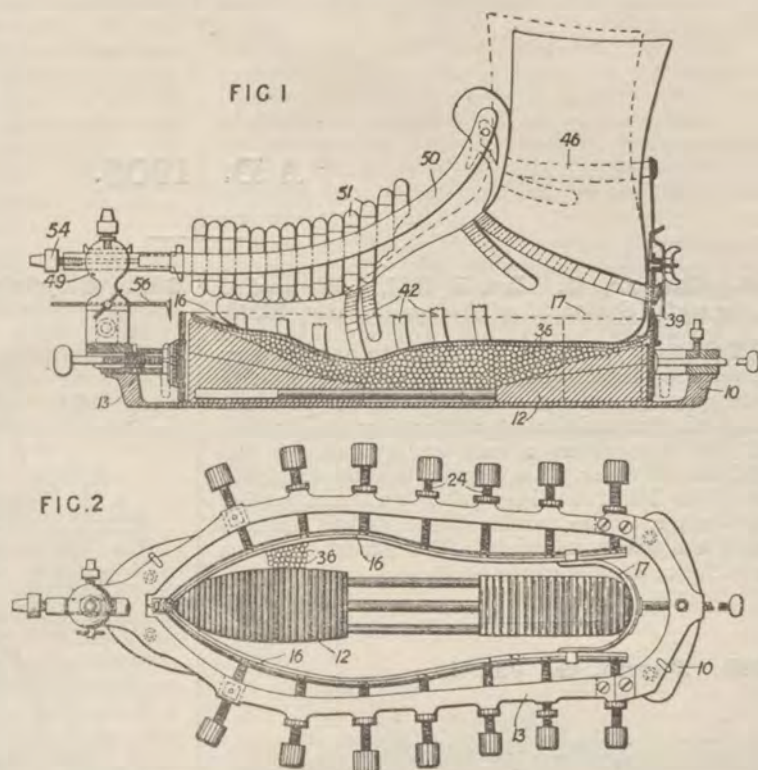
28,055. Werther, F. O. Dec. 19.

Refractory substances.—A fire-proof lining for stoves or furnaces is obtained by granulating and mixing 60 parts of magnesite, containing 80-75 per cent of magnesia, with 20 parts of fire-clay, 5 parts of chrome ore, 5 parts of silica, 5 parts of blast-furnace slag, 5 parts of basic-steel slag, 5 parts of old fire-brick, 1 part of common salt or soda ash, and 1 part of cement, the mixture being worked into a plastic state with water containing molasses or other carbonaceous matter.

28,656. Zielinski, F. Dec. 30.

Casting.—A device for reproducing the exact shape of the foot in walking consists of a mould for the sole, and adjustable frames and straps for the upper parts of the foot, by means of which lasts are made. On a base-plate 10, Fig. 2, is clamped a frame 13 carrying screws 24 by which celluloid frames 16, 17 are adjusted. The space within the frames is filled with wedges 12, Fig. 1, and shot 36. The foot is placed within the frames, which are then adjusted, and is removed in order to place a sheet of thick tin-foil over the shot. The foot is then replaced and pressed firmly downwards as in walking. The impression of the sole of the foot may be filled with plaster or may be secured with lead straps. The frame 13 is unclamped, turned over, and the place previously occupied with shot is filled with plaster. This cast serves in forming the sole of the last. A leaden plate may be used in place of the tin foil, or the foil may be covered underneath with a heated plastic substance that readily sets.

The profile of the upper part of the foot is obtained by adjustable plates 51 which are clamped on a bifurcated member 50 by a screw 54. The distance of the frame 16 from a standard 49 is measured by a slider 56. A movable frame 39 bearing straps 42, 46 serves to take the girth of the foot at different places. The profile of the plates 51 is transferred to paper, and the numbers on the straps corresponding to the plates and the distance registered by the slider 56 are noted. By the use of the sole cast and the above measurements, a stand similar to the above apparatus but without the frame 13 and shot can be set and a last made. In abnormal cases a cast may be made of



the upper part of the foot in a manner similar to that when making the sole cast.

28,745. Schruf, G. Dec. 31.

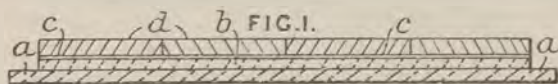
Stone, artificial; cements.—In a stone or mortar consisting of sand or other filling-material, cement, tar, or similar bituminous materials, the proportion of tar &c. never exceeds 10 per cent. This ensures a material of great strength and impermeability to water, suitable for lining the walls of tunnels, and for ceilings and damp-proof courses in the walls of buildings.

A.D. 1908.

69. Caspar, C. Jan. 5, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

Refractory substances.—Relates to a refractory material manufactured from siliceous binding-clay and pure amorphous alumina with or without magnesia &c., and consists in forming small pieces of pure amorphous aluminium hydrate by the addition of water, then drying, heating in closed vessels to 1600°, cooling, pulverizing, and mixing with water. The powder thus obtained is mixed with the other materials. The product may be used for making crucibles.

289. Payne, G. Jan. 4.

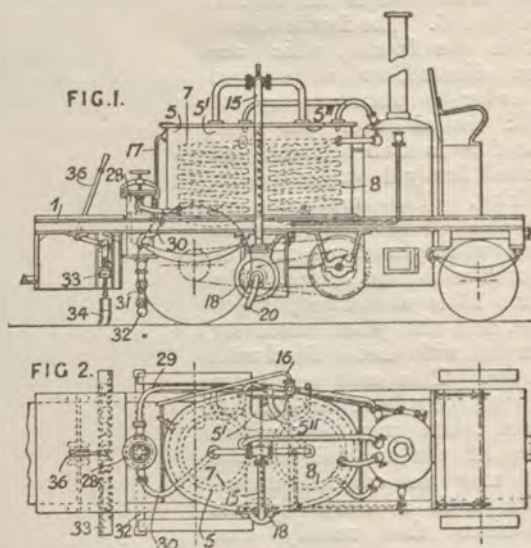


Stone, imitation.—Imitation marble or granite blocks having a polished surface are made of petrified or similar magnesite cement arranged as a thin ornamented coating on a backing of slate, wood, sheet metal, cardboard, or bricks. The cement *b* is spread on a polished sheet *a* of glass. Liquid colouring-matter *c* to produce the required effect on the surface is then applied to the back, and the backing-material *d* is finally pressed on. Another layer of cement may then be applied, and further backing-material, arranged to break joint with the backing *d*, is pressed on. After settling, the whole is removed by twisting it relatively to the glass, and is coated at the back and along each edge by pressing it against other layers of cement and colouring-material arranged on the glass plate.

467. Bougleux, E. Jan. 8.

Cements.—In order to facilitate mixture and binding with lime and cement, puzzuolana, trass, and like volcanic earths are exposed to the sun and oxidized in covered chambers, after which they are placed in long cylinders and subjected to fire or hot gases, so that the lime contained in them becomes effective. The raw materials are then ground in the usual way, and are mixed and pressed together.

601. Salvisberg, O. Jan. 10.



Asphalts, heating-tanks for. An apparatus for dressing roads with heated tar is mounted on the frame 1 of a steam-propelled vehicle. The tar is pumped from a portable vessel into one or other of two chambers 5', 5'' of a tar boiler 5. The tar is heated by a steam-coil 7 or 8 till it froths and overflows through a pipe 16 or 17, the second chamber of the boiler 5 being meanwhile filled with tar. The supply of steam to the heating-coil is then cut off and valves are opened so that the heated tar is forced by steam pressure through a pipe 29 or 30, a filter 28, and a flexible pipe 31, to a pivoted perforated distributing-pipe 32. The vehicle is meanwhile set in motion, and the tar in the second chamber is heated.

702. Seemen, E. von. Jan. 11, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

Refractory substances.—Refractory, ceramic, and abrasive products are obtained by fusing natural earths, such as bauxite, potters' clay, &c., preferably in an electric furnace, in the presence of sufficient quantities of free oxygen, or with substances, such as saltpetre or manganese dioxide, that yield oxygen. The oxides present are consequently not reduced while the carbon is burnt. Coloured products are obtained by adding suitable metallic oxides to the

fused mass. Basic material, such as magnesia, is added to neutralize the silica when it constitutes less than 15 per cent of the whole mass. To raw material containing more than 15 per cent silica, more silica is added until the product has the composition of ideal Bischoff clay, which is composed of one molecule of silica and one molecule of alumina.

860. Wilson, W. Jan. 14.

Refractory substances ; fire-bricks.—A composition for making silica bricks, lining furnaces, and bedding-in and coating ordinary silica bricks is composed of 7 to 8 parts of Belgium silver sand or Scotch white silica sand, 1 to $1\frac{1}{2}$ parts of calcined lime, and $\frac{1}{4}$ part of fire-clay. These materials are ground together in a pan mill, and when moistened with water, are ready for use.

1247. Skorzewski, W. von. Jan. 18.

Sound-deadening coverings and compositions.—In the manufacture of a material of a felted nature suitable for the insulating coverings of walls, fresh vegetable matter, such as the leaves of root vegetables, grass, reeds, &c., are subjected to a comminuting process until they are reduced to pulp, which is then moulded into any desired shape without pressure and dried, with or without artificial heat. The leaves &c. may be heated by steam before the termination of the pulping process.

1339. Bonnefont, C. Jan. 20.

Concretes ; cements.—Relates to artificial stone of the kind which is composed of a mixture of silicate of soda and a concrete consisting of a mixture of sand with cement having a base of lime and clay. The cement is prepared by combining these substances in certain proportions and under conditions as specified below. 1140 parts of fat lime, which has been soaked in water and allowed to settle, are mixed with 540 parts of kaolin or white clay, which has been similarly treated. The mixture, which should be free from iron, is sifted, filtered, partly dried, formed into bricks, and burnt at specified temperatures ; it is afterwards crushed and sieved. The concrete is prepared by mixing, in a dry state, 64 parts of sandstone and 36 parts of the above cement. This mixture is sieved and intimately mixed with neutral sodium silicate at 35° Bé. in a kneading-apparatus, the proportions

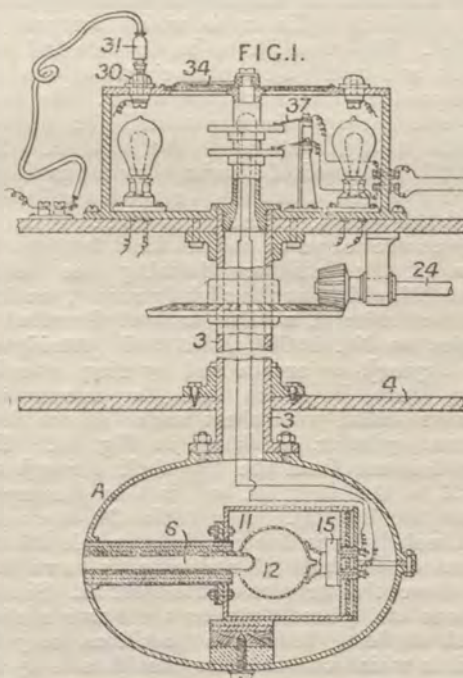


being 13 parts of the concrete to 6 parts of the silicate. A part of the cement may be replaced by a puzzuolana, or by a cement which sets less rapidly. The above proportions may be varied.

Casting.—The stone is cast in a cold state in moulds consisting of pieces of plaster *a*, Fig. 2, or of gelatine *b* enclosed in shells *c*, *d* of plaster. A conical mandrel *g* may be used to form a vacant space in the moulded object. The stone may be moulded into statues, or may be used for other architectural purposes.

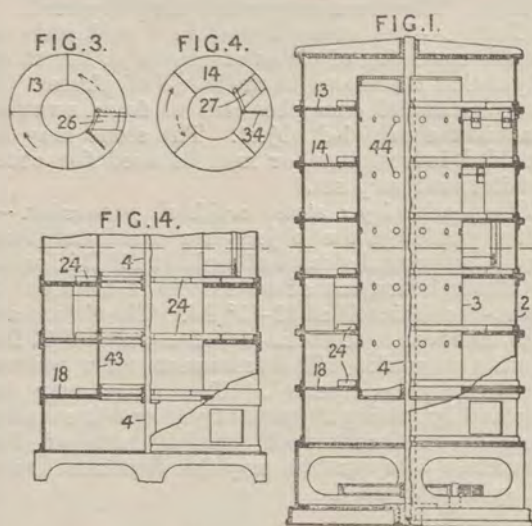
Stone, colouring ; stone, artificial, preserving.—After moulding, the objects are dried and then dipped in neutral silicate of soda at 25° Bé. for six to fifteen hours, and afterwards in a solution of hydro-fluosilicic acid at 12–15° Bé. The objects are then dried at a temperature of about 30° C. for about two weeks. The treatment with sodium silicate may be repeated. The stone may be coloured by mixing 20 parts of yellow ochre and 4 parts of red ochre with 100,000 parts of the concrete. The surfaces may be decorated with oil, spirit, varnish, &c.

1451. Schlessler, J. Jan. 21.



Sound-deadening coverings and compositions.—In an apparatus for locating the direction of sound signals, a tube 6, Fig. 1, is sound-insulated except at its end by successive sheaths of rubber, lead, rubber, and brass, and similar layers of materials are used in mounting a microphone 15 and the box 11 in which it is enclosed.

1455. **Black, J., Lennox, A. H., Lennox, H., and Lennox, A. B.**
Jan. 21.



Cements.—Apparatus for drying grain, peat, hops, salt, sand, cement, manures, chemicals small coal, &c. comprises two coaxial cylinders, the outer of which is fixed and has shelves extending to the inner revolving cylinder to which scrapers are attached. The material to be dried is fed in at the top and makes a complete circuit of one shelf before passing to the next shelf below. Hot air or gas passes through the apparatus in an opposite direction to the motion of the scrapers. The casing 2 is composed of a series of cylinders flanged at each end, and contains the revolving cylinder 3 fixed to the shaft 4. The shelves 13...18 may be in any number of parts, and are fixed between the flanges of the cylinders forming the casing. Scrapers 24, which may be slightly curved, are fixed to the cylinder 3, similar to that described in Specification No. 12,087, A.D. 1907, [*Abridgment Class Drying*], or are carried by rings attached to the shaft, in which case the intermediate spaces are filled with sheet metal 43 to form the inner cylinder, as shown in Fig. 14. The material passes from the top shelf through the hole 26 to the shelf 14, and is then discharged through the hole 27. A partition 34, depending from the shelf 13, is fixed behind the hole 26 and in front of the hole 27, and extends down to a little above the scrapers on the shelf 14. Similar partitions are placed between the lower shelves. Instead of being fixed, the partitions may be hinged, in which case they are pushed aside by the scrapers. The inner cylinder may be perforated as at 44, Fig. 1, to allow the hot air or gas to pass from the cylinders to the space between the shelves.

1704. **Farthing, I.** Jan. 24.

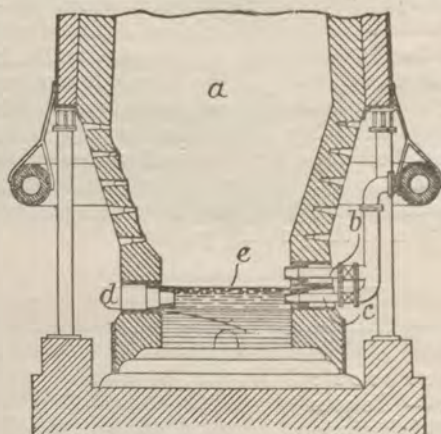
Asphalts for paving. A bituminous mixture consisting of 4 parts of tar, 2 parts of pitch, and 1 part of lias lime is heated and mixed with 20 parts dry granite, slag, or scoria, broken down to 2½

inch gauge. To this mixture are added 2 parts fine clinker or breeze. The whole is laid on a good foundation and rolled. The surface may be coated with some of the above mixture of tar, pitch, and lime, spread with stone chippings, and again rolled. Specifications No. 1757, A.D. 1871, Nos. 16,657 and 27,308, A.D. 1904, and Nos. 3749 and 15,993, A.D. 1906, are referred to.

2044. **Charlottenburger Farbwerke Akt.-Ges.** Jan. 29, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

Cements.—Small pieces of lithographic stone are cemented together to form a large stone by means of a cement formed of burnt magnesite, pulverized Solenhofer stone, magnesium chloride, and a finely pulverized metal, for example, iron.

2405. **Bamber, H. K. G.** Feb. 3.

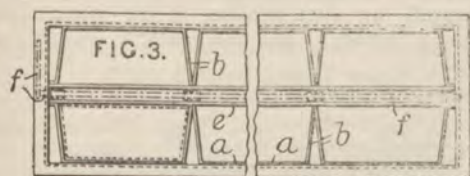


Slags, treatment of.—Air is blown through the molten slag in blast furnaces for short periods before the slag is drawn off in order to oxidize the sulphur compounds contained in the slag. In addition to the usual hot-blast tuyères *b* situated above the surface *e* of the slag, auxiliary tuyères *c* are fitted to the blast furnace *a* to admit a hot blast above the surface of the molten iron *d* and below the surface *e* of the slag. Potassium or sodium chlorate or other oxidizing-chemicals may be added to accelerate the oxidizing action.

2528. **Radlowski, K. von.** Feb. 4.

Cements.—In rotary calcining-kilns the raw materials and the fuel are mixed and introduced together. The kiln is arranged so that the materials to be burnt travel in the same direction as the products of combustion.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specifications No. 5719, A.D. 1890, and No. 4813, A.D. 1899.]

2549. Ackermann, J. Widmer-- Feb. 5.

Casting.—Apparatus for casting cocoa-butter &c. comprises a frame *a* containing two series of moulds *b* which are closed by means of two longitudinal plates *e*. A flat plate *f* mounted on pivots at each end is provided for forcing apart the plates *e* to close the mould tightly, the plate being operated by means of a handle. In using the apparatus, wrappers of parchment paper which exactly fit the moulds are inserted therein, and the moulds are filled with the liquid material. The moulds are then cooled by means of water. To prevent the liquid oil from soaking through the wrappers, it is heated only to a temperature of about 2° C. above the solidifying point, so that on pouring it into the mould, the cool walls of the mould and wrapper cause a thin layer to solidify at once. After the mass has solidified, the walls *e* are released and the filled wrappers are taken out.

2871. Hutton, E. F. Feb. 8. *Drawings to Specification.*

Sound-deadening coverings and compositions.—A desk telephone transmitter is enclosed in a box provided with an aperture through which the user may talk, and lined with a sound-proof lining consisting of two layers of felt separated by a layer of india-rubber.

3947. Lines, A. A. Feb. 21.

Refractory substances.—Incombustible articles used in connexion with gas or electric fittings, such as mantle rings, burner nozzles, deflectors, resistances, and insulators, are made of a mixture consisting of not more than 4 parts of silicon carbide to 10 parts of clay.

4102. Berndt, A. Feb. 24.

Concretes.—A backing for glass tiles consists of gravel, preferably 3 parts, cement 2 parts, and an elastic material, such as kieselguhr or sawdust, 1 part.

4566. Pauly, A. A. April 30, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

Stone, hardening.—Artificial stone blocks are partially seasoned while in the moulds by means

of steam, and are then removed to a car, on which they are subjected to the action of wet steam so as to become thoroughly hardened and seasoned. Two series of moulds 2 are arranged on

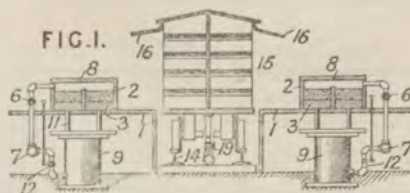
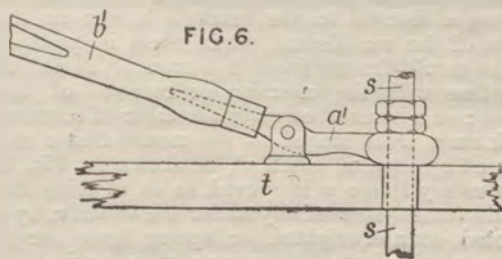


FIG. 7.



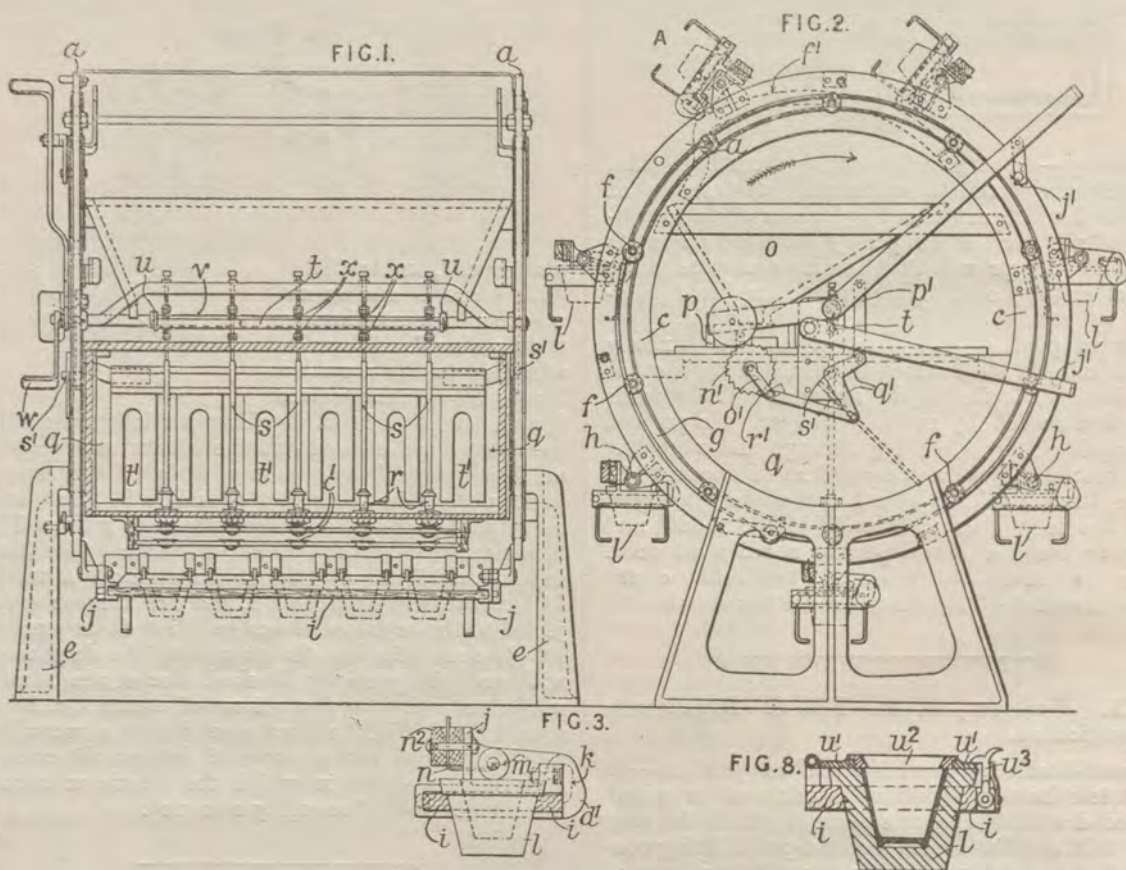
platforms 1, and are fitted with doors 8 and steam pipes communicating with mains 7. Steam is admitted to the moulded blocks by opening valves 6, and, after the blocks have been partially seasoned, the doors 8 are opened and the blocks are ejected on their pallets 3 by means of rods 11 supported upon pistons in the steam cylinders 9, which are operated by steam admitted through valves 12. The ejected blocks are placed upon a car 15 fitted with doors 16 and adapted to travel along a track 14 between the platforms 1, and are further subjected to the action of steam supplied from a main 19. In a modification, the main pipe 19 is dispensed with and the partially finished blocks are afterwards subjected to the action of steam &c. in a special kiln. Fig. 7 shows a section of a movable mould provided with a series of drawers 21 corresponding to pallets, in which the plastic material can remain until thoroughly seasoned.

4806. Stubbs, J. March 3.

Casting pottery. Relates to apparatus for making cups, jugs, and other hollow-ware by casting slip into porous plaster moulds, which, when they have absorbed sufficient moisture from the slip to cause a layer of clay to form in the mould, are tilted so as to discharge the surplus slip back into the slip trough. The apparatus comprises a rotary frame *a* for carrying the moulds, mounted on rollers *f* on a stationary frame *c*, which is supported by standards *e* secured to the bed or floor; a main slip trough *g* provided with valves *r* which may be operated either simultaneously or independently so as to fill the moulds; mechanism, actuated either by hand or power for giving the

rotary frame a step-by-step or slow continuous motion, so as to enable a series of frames carrying moulds to be fed thereto and removed therefrom; and mechanism for tilting the moulds so as to

discharge the surplus slip. The moulds *l* are mounted in a number of wooden frames *i*, which are secured by turn-catches *k* in channelled brackets *j* pivoted to the rotary frames *a*.



Flexible projections, preferably consisting of rubber disks *m* carried by springs *n* attached to frames *n'* secured to the brackets *j*, bear on the edges of the moulds and retain them in position in the mould frames in such a manner as not to interfere with the insertion or removal of the latter; or a cover *u'* carrying a number of counter-sunk rings *u''* is hinged to the mould frame and secured by a spring catch *u'''*, as shown in Fig. 8. The rotary frame *a* is moved, so as to bring the mould frames successively under the valves *r*, by a pivoted counterweighted or spring lever carrying a pawl adapted to engage with projections *j'* on the frame. The moulds are filled with slip as they pass under the valves *r* by operating a lever *w* on a shaft *v* having arms *u* which carry a bar *t* engaging the valve spindles *s* through the medium of springs *x*. The amount of slip in each mould may be adjusted by providing the valves with independent operating-means, consisting of forked levers *a'* which have long arms *b'* and are mounted on the operating-bar *t* so as to engage nuts on the valve spindle *s*. The slip is filtered before passing into the moulds by sieves *c'* arranged just below the valves *r*. As the frame *a* rotates, each mould frame remains horizontal until, on reaching a position *A*, Fig. 2, projecting arms *d'* on the brackets *j* engage with a fixed cam-

surface *f'* and tilt the moulds, so as to discharge the surplus slip into a slip trough *o*, from which it filters through a sieve at the bottom into a vibrating filtering-trough *p* and then passes into the main slip trough *q*. When the frame is further rotated, the mould frame on reaching the end of the cam-surface *f'* resumes the horizontal position, and the rough edges of the cast vessels may then be removed, for example by a revolving scraper device suitably supported and driven. The mould frame containing the cast ware is then removed from the rotary frame, a fresh one containing empty moulds is substituted, and the cycle of operations is repeated. The filtering-trough *p* is given a vibratory movement, as the frame *a* rotates, by means of a ratchet-wheel *n'* actuated by a weighted pawl *r'* carried by a crank-arm *o'*, which is operated through links *p'* and a bell-crank lever *q'* by the lever *g'*. The bell-crank lever *q'* is mounted on a shaft *s'* which carries a number of arms *t'* for agitating the slip in the trough *q*. In the Provisional Specification it is stated that each mould, before being filled from the main trough, may be damped with thin slip by means of a revolving brush or by two perforated cones fitting one within the other. The brushes or cones are moved into the operative position by hand or foot levers.

4847. Waelde, E. April 10, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

Sound-deadening compositions.—A composition consisting of finely divided leather waste, with or without cork waste &c., and a binding-agent, consisting of a mixture of magnesium chloride, magnesite, glue water, and pitch or their equivalents, is used for making flooring, plates for floors, and for heat, electric, and sound insulation.

5460. Kettembell, O. March 11.

Cements.—A composition for covering walls, floors, &c., and for casting in moulds, is prepared by mixing impure calcined magnesite and filling-materials, such as cork meal, wood flour, sawdust, slate dust, ashes, ground pumice, sand, &c. with a solution of magnesium chloride to which a mixture of zinc sulphate, acetic acid, and a fatty-acid soap has been added. It is stated that the product does not swell or blister after setting, and resists the action of acids, soaps, and disinfectants.

6230. Barnett, W. T. March 31.

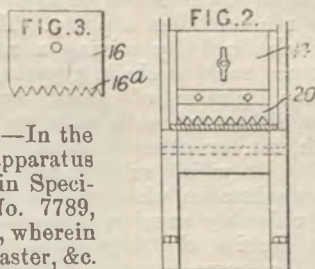
Concretes.—Artificial marble and stone are made from a mixture of marble or stone dust, sawdust, Portland or other cement, and colouring-matters.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specifications No. 5737, A.D. 1892, and No. 10,631, A.D. 1895, [Abridgment Class Moulding &c.].]

6256. Sundell, F. R. A. March 20.

Stone, artificial and imitation.—Artificial stone slabs and the like are made on a suitable support, such as a glass plate, and after removal the face is ground to a substantial extent. A thin layer of stone composition, such as that described in Specification No. 7976, A.D. 1903, of the desired ground colour, is applied to the glass, and into this layer is thrown, for example, with a paint brush, wet stone masses of different colours, such masses completely or partly penetrating the bottom mass. A layer of marmorite is applied to the upper surface, and dry marmorite is sifted over this surface for absorbing moisture. The back surface is scraped away to leave a slab of any required thickness. To the back of this may be applied a piece of well-soaked fabric, such as entrepne, or several pieces in the case of a table top, which unite with the slab on drying, dry marmorite being again sifted on. The slab is removed from the support by raising one corner and injecting water. A substantial thickness is ground off the face of the slab, which may then be polished. By using suitably-shaped supports, lists or other shapes may be made.

7091. Lake, W. E., [Sackett Plaster Board Co.]. March 31.



Cements.—In the type of apparatus described in Specification No. 7789, A.D. 1899, wherein cement, plaster, &c. is delivered from a

hopper to a travelling band which carries it through water and then discharges it in a saturated condition, mechanism is provided for loosening, corrugating, or furrowing the layer of cement on the band in order to facilitate its saturation. For this purpose, a plate 16, adjustably secured inside the hopper feed-box to regulate the thickness of the layer, may have a serrated lower edge 16^a, as shown in Fig. 3; or an additional plate 20 with a serrated edge may be fitted to the outside of the feed-box 14, as shown in Fig. 2.

7430. Marino, P. April 3. *Samples furnished under Section 2 of Patents &c. Act, 1907.*

Fire-proof coverings &c.—A variety of cellulose soluble in ordinary solvents such as acetone, ether-alcohol, &c. is prepared by treating pyroxylin with a mixture of alcoholic solutions of manganese chloride, ferric sulphate and sodium or potassium ethyl sulphate diluted or not with ether alcohol or other suitable solvent, and adding to the liquid thus obtained a mineral acid solution of magnesium ammonium phosphate. On heating and subsequently cooling the mixture, the cellulose separates from the mother liquor, which, after neutralization of the acid present, can be used to render fabrics &c. non-inflammable. Fabrics may be soaked in the solution and afterwards ironed as if they had been merely starched in the ordinary way.

7827. Shitkewitsch, N. April 8.

Concretes.—Consists in the use as armour for ships and fortifications of a concrete in which small and thin metallic particles or short pieces of metal wire are used instead of broken stones and sand to constitute the aggregate, the cement used being rich in silicates or being mixed with kieselsguhr, trass, puzzuolana, or other materials rich in silicates.

7887. Brook, F. H. April 9.

Concretes; stone, artificial.—With the ordinary materials, comprising cement, granite chippings, &c., that are used in making concrete or artificial

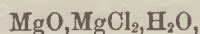
stone for paving in situ, or for paving-slabs, steps, stair treads, and landings, are incorporated fragments of material of a more friable nature, whereby the tread is rendered less slippery. The friable material is obtained by mixing a non-greasy earthy substance, such as chalk, gypsum, slaked or unslaked lime, plaster of paris, hearthstone, pumice-stone, infusorial earth, with melted resin, asphalt, pitch, tar, or other resinous, bituminous, or tarry binder, to which sulphur may be added. The resulting substance, when cool, is reduced to fragments, preferably angular, and added to the cement and granite chippings prior to mixing with water. In some cases, the fragments are incorporated in the tread portion only.

8017. Branco, H., and Gumpert, G.
April 10.

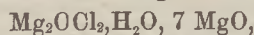
Sound-deadening coverings and compositions.—An insulating-material is formed from peat by treating the moist or dry fibres so as to open them out without injury, and entangle or felt them together and then subjecting the mass to hot dry steam without charring or distilling the peat and moulding it under high pressure. Prior to the moulding process the mass may be treated to render it fire-proof, and proof against insects and fungoid growths, and the steaming may be carried out with superheated steam so as to sterilize the product. The moulded product, which may be in the form of plates, blocks, strips, spheres, or ropes, may be subsequently treated by stamping, moulding, colouring, or covering with varnish &c., and can be used for building purposes and as "an insulator against moisture, electricity, heat, and sound."

8307. Eggenhöffner, R., and Sbertoli, E.
April 14.

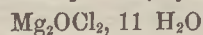
Cements.—Magnesia cements are manufactured by a process in which the formation of



magnesium "ortho-oxychloride," is the first step. Anhydrous "litosilo" having the formula



and anhydrous "ortochlor" $\text{Mg}_2\text{OCl}_2, \text{H}_2\text{O}, 3 \text{ MgO}$, are prepared therefrom by mixing 1 molecular weight of the "ortho-oxychloride" with 7 and 3 molecular weights respectively of magnesia. These set with 26 and 18 molecular weights of water respectively, to form "litosilo" and "ortochlor" magnesia cements. Litosilo has been previously manufactured by mixing MgO with a solution of MgCl_2 at 18°Bé. and with sawdust. The "ortho-oxychloride" is prepared by the interaction of magnesia and anhydrous HCl, by partially calcining MgCl_2 , 6 H_2O in the open air, by calcining



obtained by the action of a solution of MgCl_2 at 33.6°Bé. on MgO, by dissolving MgO in a solution of HCl at 18.4°Bé. , or by dissolving molecular

weights of MgO and MgCO_3 in a similar solution. The cements may be used alone or mixed with sawdust, mineral detritus, amianth, &c., and may be used directly or may be preserved in the dry state; or the "ortho-oxychloride" and magnesia may be mixed in situ. The cement may be used for lining cisterns and terraces, for reinforced cement structures such as balconies, and, when mixed with sawdust, for the revetment of holds and other compartments of ships in place of wood; it may also be used for retaining-walls, roofs, pavements, floors, walls, fortifications, and decks, and for protecting ships' turrets, casements, batteries, armour plates, and bulwarks. When reinforced by metal rods &c., decks may be constructed directly on the girders.

9477. Mitchell, G. A., Mitchell, A. J., and Mitchell, E. E. May 1.

Asphalts.—Relates to a composition such as that described in Specification No. 18,316, A.D. 1906, for making roads &c. The present composition consists of grit or broken stone 30 parts, asphalt 58.75 parts, bitumen 1.25 parts, Portland cement 7.4 parts, asbestos 0.1 part, soda 0.5 part, and cockle shells or breeze and chalk 2 parts. The bitumen is heated in a cauldron, the asphalt is added, and the grit is stirred in. The other constituents, previously mixed together, are then added, and the whole is raised to the boiling point and allowed to simmer. The composition may be used at once; or it may be allowed to cool and be remelted when required, in which case the grit may be added when the mixture is remelted. The soda may be added last. Flint may be used in place of the grit, and magnesian limestone or dolomite may replace the chalk. In some cases, half a pint of spirits of wine is added to a cauldron containing three-quarters of a ton of the composition.

10,110. Lake, W. E., [*Spackman Engineering Co., H. S.*] May 9.

Cements.—A plastic or cementitious material comprising lime or the like is mixed with hydraulic calcium aluminate or a similar accelerator rich in alumina-like material, with or without plaster of paris or other controlling material, and puzzuolanic or siliceous material, such as infusorial earth. The aluminate, which contains three molecules of lime to one of alumina, may be prepared by sintering lime and bauxite, kaolin, high-grade aluminium clays, &c. The composition is particularly suitable for wall plasters.

10,771. Mayhew, A. May 18.

Fire-proof coverings &c.—A composition for waterproofing and fire-proofing fabrics comprises glue or gelatine, glycerine, chrome alum or bichromate of potash, potato starch, and magnesium

chloride, to which may be added kaolin &c., a little vegetable oil, and colouring matter.

10,807. Polystus, G., [Firm of]. May 18, 1907, [date applied for under Section 91 of Patents &c. Act, 1907]. Void. [Published under Patents &c. Act, 1907.]



Cements.—In treating cement, ores, &c., the roasting and cooling operations are conducted in a single rotary tubular furnace. The rotary furnace *a*, Fig. 1, is charged by the pipe *b* and coal-dust is blown in through the pipe *c*. The air drawn in at *g* cools the material in the lower part of the furnace and promotes combustion in the upper part. Naphtha, producer gas, &c. may be used in lieu of coal.

11,062. Payne, S. May 21.

Refractory substances.—A composition for fire-bricks, retorts, furnace linings, crucibles, &c., which does not require firing in a kiln, is made by mixing in a dry state, sea-sand, flint, gravel, or any other form of silica, and Portland cement or gypsum, and then incorporating with the mixture clay reduced to slip with Stockholm or gas-tar and water until a consistency for moulding is reached. The articles are moulded and exposed to the air to dry. In a given example, the proportions are, sea-sand 4 parts, flint or gravel 1 part, Portland cement or gypsum 1 part, clay with tar and water 1 part. The invention is distinguished from that of an artificial stone composed of sand, cement, tar and water which is exposed to the air to dry.

11,287. Clare, J. May 25.

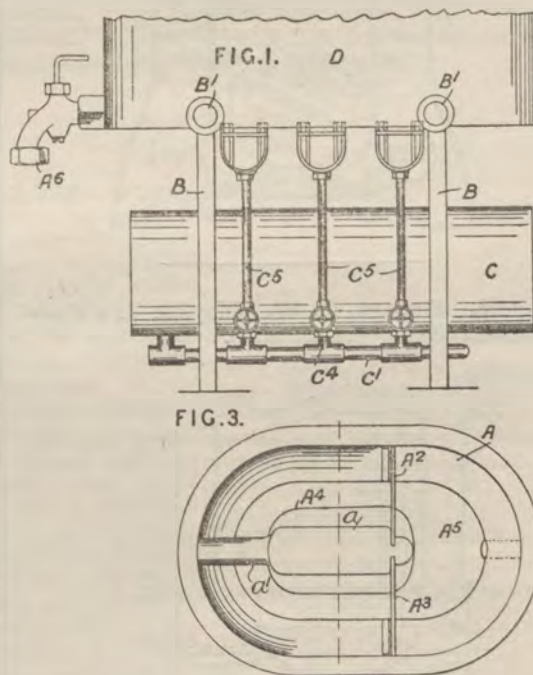
Asphalts.—A composition serving as an asphaltic mastic, or for spraying on roads to render them dustless and waterproof, consists of resin, gum thus, and sulphuric acid, combined with gas tar. According to the Provisional Specification, the composition may consist of gas tar, resin or gum thus, and sulphuric acid.

11,522. Timofeeff, P. May 27. [Patent of Addition to No. 17,006, A.D. 1906.]

Cements.—A modification of the cement described in Specification No. 17,006, A.D. 1906, is composed

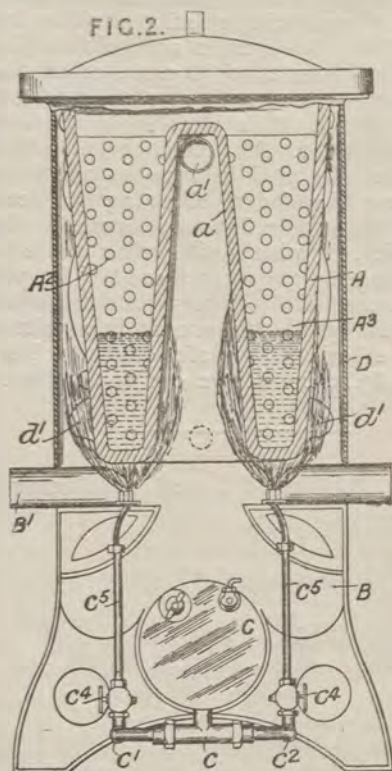
of sulphate of lime, burnt at a temperature not lower than 136° C., a basis consisting of a mixture of dextrin and soluble glass, and an acid or salt capable of separating gelatinous silica from the soluble glass, the dextrin and soluble glass each constituting from 2 to 10 per cent of the mass. The ingredients are used in a pulverulent form, and the reaction takes place when the cement is mixed with water. The basis or the soluble glass may however be used in aqueous solution. Substances may be added which strengthen, accelerate, or retard the setting, impart resistance to detrition or viscosity, or which will, when the cement is heated to a temperature such as 1470° C., produce a petrified mass, and also filling-materials, according to the use for which the cement is required. By mixing the basis with chalk, dolomite, limestone, cellulose, &c., concretes &c. can be obtained.

11,557. Allan, J., and Richmond, J. Nov. 30.

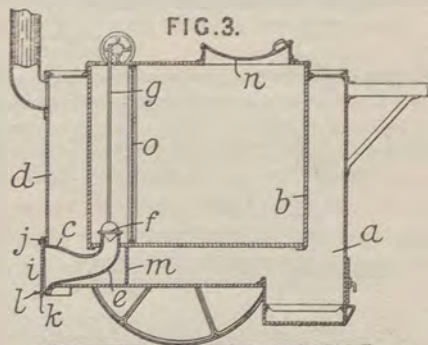


Asphalts.—Bitumen, pitch, marine glue, grease, &c. are melted in an elongated vessel *A* having a cone *a* elongated horizontally, through which pass the hot gases from an oil stove to a chimney *a*¹. The vessel *A* is supported on two standards *B* carrying the fuel tank *C*, from which the oil is forced by air pressure through pipes *c*, *c*¹, *c*² and valves *c*⁴ to two rows of vertical pipes *c*⁵ with burners. A casing *D* surrounds the vessel *A* with a space *d*¹ between them. The vessel *A* is divided into two compartments *A*⁴, *A*⁵ by perforated plates *A*², *A*³, through which the melted material passes to the tap *A*⁶. The stove is preferably surrounded by doors hinged to the standards *B*. The apparatus may be transported

by hand if bars are inserted in the sockets B¹ of the standards B, or wheel axles may be inserted in these sockets.



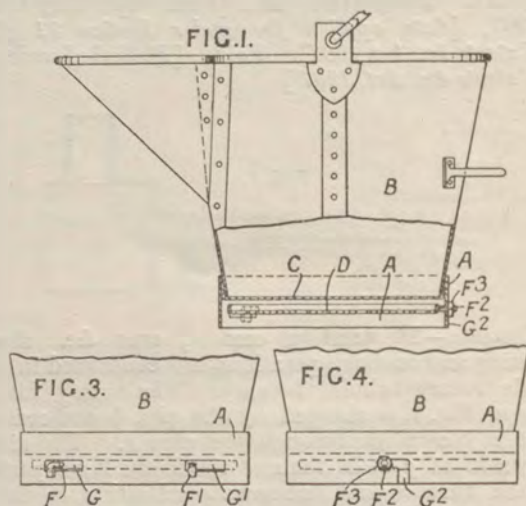
11,747. Smart, F. W. May 30. *No Patent granted* (Sealing fee not paid).



Asphalts.—A wheeled tar heater and distributor comprises a furnace *a*, a tank *b* with lid *n* and vertical filtering-screen *o*, and a passage *c* contained within the smoke-box *d*, through which the tar passes to a distributor plate *i*. The passage *c* is connected to the tank *b* by a supply tube *e* with a plug valve *f* which is opened and closed by operating a rod *g* by means of a worm and worm-wheel. The opening of the passage *c* is covered by the distributor plate *i* bolted at *j*, the lower end *k* being sprung away by means of set-screws *l*. A short transverse baffling-plate *m* prevents the flames from coming into contact with the passage *c*. As a modification, the distributor may be arranged outside the furnace and jacketed, the furnace gases

being passed around the jacket through suitable controlling-valves.

11,953. Tyers, F. June 2.



Asphalts.—The bottom *C* of a bucket *B* for heating pitch is protected from direct contact with the flames by a fixed or removable guard-plate *D* formed with small perforations which allow the flames to pass through, but not far enough to strike on the bottom *C*. The bottom rim *A* is made deeper than usual, and, in the example shown, is formed with three slots *G*, *G'*, *G''* to receive three radial studs *F*, *F'*, *F''* on the plate *D*. The ends of the studs *F*, *F'* are turned to engage the outer side of the rim *A*. One slot *G''* is of the bayonet-joint type, and the stud *F''* which fits therein is fixed by a nut *F''* screwed up to the rim *A*.

12,258. Hugot, A. June 5. *Drawings to Specification.*

Refractory substances.—Walls and linings for electric furnaces are made from mixtures of carbon in the form of graphite, tar, or resin, with a base such as lime or magnesia, a neutral substance such as iron chromate, an acid such as siliceous sand, or mixtures of such substances.

12,570. Rogers, A. B. C. June 11.

Fire-proof coverings and compositions.—A non-inflammable coating consists of powdered mica and alum solution.

12,597. Cawley, J., and Moore, W. S. June 12.

Stone, artificial; fire-proof coverings and compositions.—A building-material for use in making

tiles, slabs, blocks, bricks, &c., is obtained by mixing the lime waste from chemical works with clay and other suitable ingredients. When intended for outdoor use, the clay in the plastic or other state is added to the waste lime as obtained from the chemical works in about the proportions 80:20, respectively, the mixture being moulded, pressed, and fired in the usual way. As an alternative, both substances may be first reduced to powder, then mixed, incorporated with water and finally burnt. A certain proportion of cement may be added to act as a binding-agent. When intended for indoor use, from 25 to 50 per cent of chemical lime waste is used with from 75 to 50 per cent of clay. Sawdust may be added when a light product is required. This material is suitable for use as fireproof flooring, or for protecting girders, stanchions, and the like. For partition slabs, the quantity of clay used is reduced and in some cases dispensed with, plaster of paris being used in admixture with lime waste.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specification No. 27,173, A.D. 1898. [*Abridgment Class Moulding &c.*].]

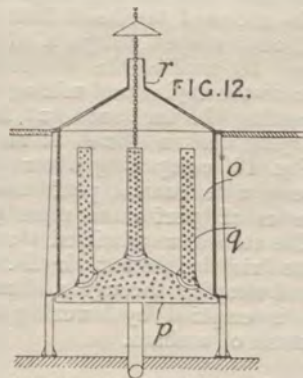
12,980. Eberhard, R. June 17, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

Cements; fire-proof coverings and compositions; mortars; plasters; stone, artificial and imitation; stone, natural and artificial, hardening and preserving.—The mobility and reactivity of water-glass are stated to be increased by adding to it very small quantities of dissolved chrome salts or chrome alum, single or mixed, which form with the water-glass compounds which remain in solution. This preparation, referred to below as "the solution," is used in place of ordinary water-glass for many purposes. A clear gelatinous mass separates from the solution on evaporation in air which can be redissolved in water or chrome salt solutions. The chromium compounds may be added to the water-glass after its preparation, or previously to its separate ingredients; or they may be separately mixed with pigments &c., which are added to the water-glass for other purposes. In an example (of a binding or fixing-agent for colours) 0.1 per cent by weight of potassium bichromate, in aqueous solution, is added to water-glass of 18–23° Bé. The prepared paints render cement or stone weather-proof. Suitable proportions of weather-proof ingredients may be added. In a modification, the solution is evaporated to dryness, the residue is pulverized and mixed with paint, water or caustic alkali solution is added, with or without the addition of separately dissolved water-glass; or the alkali may be added as a dry powder and the mixture be mixed with water or dissolved water-glass. Wood is rendered non-inflammable &c., by impregnation with the solution, in this case containing a larger proportion of chrome salts; the wood is first dried in a drying-chamber. The treatment may be repeated. Unplaned wood is also painted with the solution. The solution is further used in place of ordinary water-glass for coating

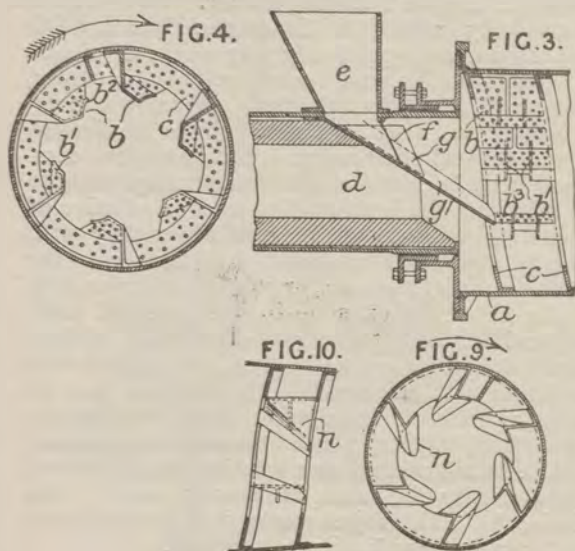
and hardening artificial and natural stone, earthenware, plaster, and similar building-materials, and for coating paper and canvas, to make them fire-proof &c. The Specification, in the original form, as open to inspection under Section 91 (3) (a), comprises also the following matter. The solution is made by adding to the water-glass suitable proportions, not specifically very small, of simple or composite chrome salts soluble in water, for example, chromic anhydride, chromates, polychromates, &c., or chrome salts soluble in alkalies, or mixtures of these salts. Suitable silica compounds may be added in solution or suspension to the solution. In impregnating wood, a solution of aluminium sulphate may be used alternately with "the solution." The solution is advantageous for making artificial stone &c., or powdered chrome salts may be added, for example to a mixture of sand, Portland cement, powdered limestone, calcium silicate and silica, and water-glass. Supplementary hardening with calcium-chloride solution may be dispensed with. The solution is used for hardening cement, mortar, plastic masses, or gypsum; suitable solutions, such as a solution of aluminium sulphate, may be used alternately with "the solution." This subject-matter does not appear in the Complete Specification as accepted.

13,232. Plant, D. T. June 22.

Asphalts.—Relates to apparatus for drying broken stones and for mixing the same with tar to form tar macadam. In the drying-apparatus, the stones fall from a hopper *e*, Fig. 3, past a flap *f* and down a shoot *g* into a revolving chamber *a*, through which a stream of hot air or gas is passed. The chamber *a* is fitted internally with a helical blade *c* for feeding the stones forwards, and with bucket-shaped scoops *b* between the turns of the blade, preferably arranged in staggered formation, each provided with a lip *b*² partly cut away at *b*³ and formed with ribs *b*¹ dividing each scoop into compartments. The chamber *a* may be cylindrical or may taper toward the outlet end, in which case the blades *c* are made deeper and the scoops *b* shallower toward the outlet end. The blade *c* may be omitted, and the stones may be helped forward by a slight inclination of the chamber *a*. The hot air or gas may enter the chamber *a* at either end through a valve-controlled tube *d* at the end of which the chamber *a* is journaled. When the air or gas, as shown in Fig. 3, enters at the same end as the stones, the current is deflected



on to the stones by a continuation g^1 of the shoot g . The blade c and scoops b may be perforated for the passage of the air &c. Near the outlet end of the chamber a the scoops b may be



omitted and the chamber fitted with a screen for removal of the dust. The dried stones pass down a shoot with a flap into a mixing-chamber similar to the chamber a and similarly supplied with hot air or gas, tar being injected for mixture with the stones. The mixing-chamber is tapered so that the excess of tar drains back to the admission end. Trough-shaped scoops n of special form, Figs. 9 and 10, replace the scoops b . The hot air &c. from the drying and mixing chambers is used for heating the tar tanks and for wholly or partially drying broken stones in an apparatus, shown in Fig. 12, comprising a vertical chamber o with a removable conical perforated base p carrying a series of perforated pipes q closed at the top. The stones are admitted through doors above, and are dried by the hot air &c. entering from below and escaping through a chimney r . The chamber o is emptied by lowering the conical base p by means of a chain.

13,792. Eberhard, R. June 29. [Patent of Addition to No. 12,980, A.D. 1908.]

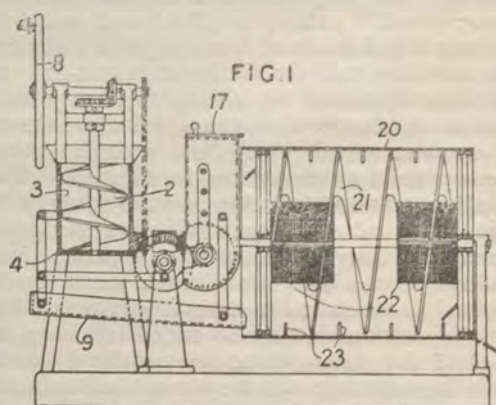
Cements; fire-proof coverings and compositions; mortars; plasters; stone, natural and artificial, hardening and preserving.—In the process described in Specification No. 12,980, A.D. 1908, in place of chrome salts, chrome acids are used, or, in conjunction with very small quantities of such acids or chrome salts, very small quantities of one or more compounds of the following categories: bases soluble in alkalies and salts of such bases; salts, oxides and hydrates of heavy metals, soluble in alkalies; boric acid, oxalic acid or ammonium oxalate. The following are examples of such bodies: stannous or stannic chloride, stannic hydrate, sodium stannate,

tin sulphides, pink salt and other tin salts; lead oxide, peroxide, carbonate, acetate and other lead salts; potassium manganate and permanganate; zinc oxide, hydrate and salts; aluminium hydrate, chloride, phosphate and other aluminium salts; aluminium salts in conjunction with tartaric and citric acids and alkali; borax and borax in conjunction with barium or calcium chloride or magnesium sulphate; sodium phosphate. The corresponding double-salts can be used if soluble in alkalies. Some of the salts precipitate silicates from the water-glass, but the precipitate redissolves in a little alkaline lye. In an example, 0.05 per cent of chromic acid, and 0.25 per cent of freshly precipitated lead hydrate dissolved in alkaline lye, are added to water-glass of 20° Bé.

13,941. Turner, C. A. P. July 1.

Stone, artificial; concretes; stone, artificial, preserving.—Artificial stone is waterproofed by adding alum to the plastic composition before moulding and spraying the surface of the mould with soap solution, so that the waterproofing-elements shall be brought into contact on moulding. This also preserves the surface of the mould.

14,271. Jacobi, H. July 4.



Stone, artificial and imitation; stone, colouring.—In a process for making artificial marble, concrete, plaster, or the like in a moist condition is forced through the perforated bottom of a cylinder, whence it passes beneath liquid-colour &c. sprinkling-devices into a drum where it is mixed with any colour and delivered ready for grinding and polishing. The screw 2 in the cylinder 3 is rotated by bevel gearing from a hand-wheel 8, and the composition is forced in the form of strips through the perforated plate 4 on to a shaking board 9. The strips pass down the board beneath the receptacle 17, which contains rotating brushes for spraying colour on to the mixture, into the rotating drum 20. Any colour is sifted from sprinklers 22 in the drum on to the mixture which is stirred by pins 23 to make "marble nests," and carried to the outlet by the worm 21. In a modification, for use with composition of a sandy nature,

the shaking board is replaced by a travelling band for conveying the mixture from the press to the drum, and the drum is driven by friction wheels. Several presses may deliver on to one board and into one drum.

14,336. Kelly, T. D. July 6.

Cements.—A white Portland cement is made by calcining (1) chalk or lime 2-4 parts, flints 1-4 parts, and common salt, preferably 10-15 per cent, or (2) ordinary ferruginous clay, preferably washed with hydrochloric acid and then with water, chalk, and common salt to the extent of 10-15 per cent in excess of the amount of iron oxide contained in the clay. The flints are roasted to redness, and are then plunged into cold water. Any iron present is converted into iron chloride, and is volatilized.

14,342. Berner, R., Frankl, E., and Mendelsohn, M. July 6.

Concretes.—Artificial stone is manufactured by stirring a mixture of 3-6 parts fine sand, 3-6 parts pebbles, 5-8 parts cinders, and 1-1½ parts Portland cement to a thick paste with a mixture of milk of lime, of about 20 per cent strength, and 10 per cent of calcium-chloride solution containing 100-150 grammes per litre. The paste thus formed is moulded and dried in the air.

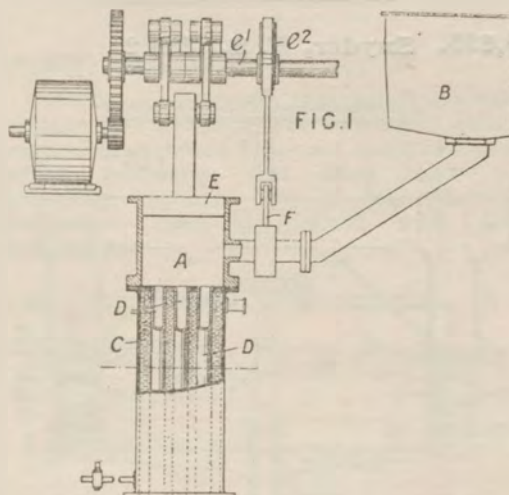
14,619. Brearley, H., and Moorwood, F. C. July 10.

Refractory substances.—In the manufacture of silica bricks, ganister, and other refractory materials, instead of adding the lime to act as the binding-material or flux to the material direct, a solution of calcium chloride or other calcium salt which will deposit lime when the brick &c. is burnt is added so that an even distribution of the lime throughout the material is ensured. If desired, the calcium salt may be prepared in situ by first mixing lime with the brick &c. materials direct and then adding a suitable acid.

14,623. Irvine, G. M. L. Moore-. July 10.

Casting soap, butter, wares, jellies, &c. Soap in the fluid condition is forced by a reciprocating plunger E from a receiver A into vertical or horizontal moulding-tubes D mounted in a cooling or refrigerating chamber C. The plunger E is operated by a crank-shaft e^1 , which carries an eccentric e^2 for actuating a valve F for shutting off the supply of soap from the storage tank or mixing-pan B when the plunger is moving forwards. The plunger is fitted with a valve which allows air to pass as the plunger recedes, to prevent

the soap from being drawn back from the moulding-tubes D. The moulding-tubes are polished internally, and may be of square, circular, elliptical, or other section. Appliances having reciprocating



knives, wires, &c. may be fitted at the delivery ends of the tubes to cut the soap into bars of the required length, or, as stated in the Provisional Specification, means may be arranged at the entrance ends of the tubes to introduce disks, blocks, or stamps at regular intervals by means of a moving perforated or recessed belt so that the soap is delivered from the tubes already formed into bars or tablets. The apparatus may also be used for casting other materials, such as butter, waxes, jellies, &c.

15,100. Kathe, J. July 16.

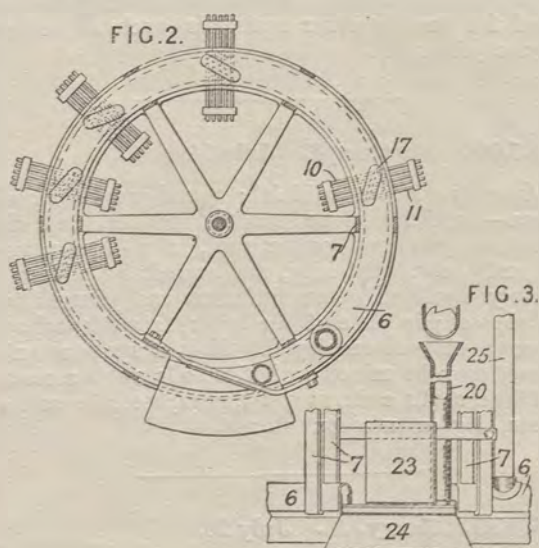
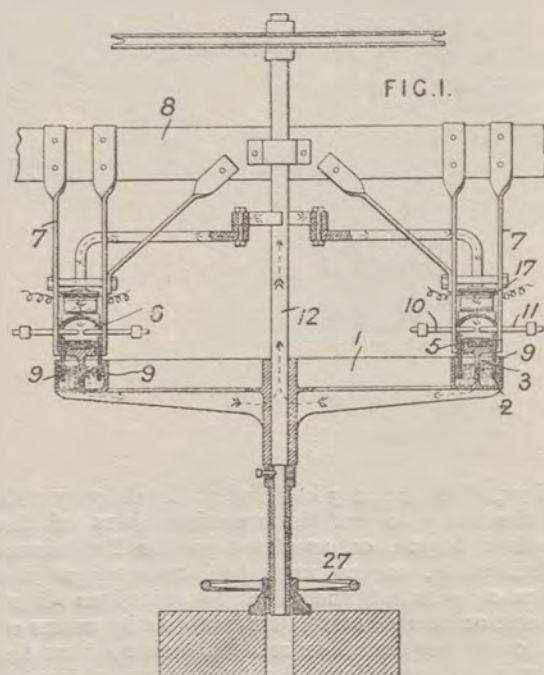
Cements; stone, artificial; sound-proof compositions.—Artificial stone, mortar, plaster, and the like are rendered waterproof, non-conducting towards heat, electricity, and sound, by adding a watery emulsion of argilliferous and bituminous substances; in place of the latter, fats, oils, tallow, or soaps may be employed. The bituminous substance may be mixed with fats, oils, rubber, resin, sulphur, chalk, cork, sawdust, mica, metallic oxides, flints, slag, or tufaceous stones.

15,339. Levy, A. July 20.

Cements.—A fire-proof and waterproof coating-composition is formed of magnesite, calcined at 590-600° C. until about 6 per cent of the carbon dioxide is driven off, and magnesium chloride, to which may be added powdered marble, chalk or other form of calcium carbonate, a pigment, and paper-pulp, cellulose, or ramie fibre. The coating is washable, acid- and alkali-proof, and may be used in schools &c., to form wall slabs for writing purposes. The composition may be used as a priming, for filling the pores of wood before

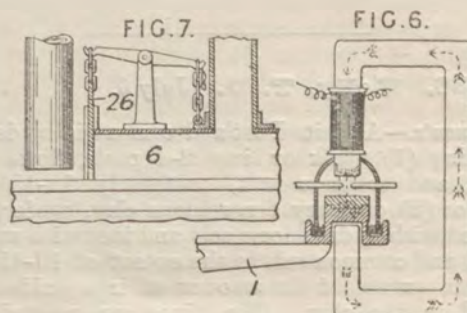
polishing, and for printing on paper, theatrical decorations, &c., and may be applied by a printing-machine or by spraying.

15,625. Snyder, W. E. July 23.



Cements.—Comprises a rotary electric furnace for cements, in which the electric arc is prevented from penetrating the charge, while air is admitted in the direction opposite to that of the hearth. A spider 1, mounted on the rotatable shaft 12, carries a trough 2 divided into two annular chambers by a plate 3, which carries the hearth 5. Over the hearth is arranged a fixed hood 6 suspended by straps 7 from the fixed beam 8. Above the hearth and within the hood are arranged

groups of electrodes 10, 11, and electro-magnets 17 are fitted outside the hood, the electro-magnetic circuit following the course indicated by the dotted arrows. The end of the hood is fitted with an



inclined scraper 23 and hood 24, and the charge, which is fed in intermittent quantities through the hopper 20, is acted upon by a current of air which is induced through the pipe 25 and enters through one end of the hood. Plates 9 dip into a liquid, such as oil, in the channel 2. The distance between the arc &c. and the hearth may be regulated by turning the wheel 27. Fig. 6 shows a modified electro-magnetic circuit for increasing the effect of the arc, while Fig. 7 shows a door 26 for regulating the amount of cement material supplied through the hood 6.

15,797. Hövermann, B. July 24.

Cements.—A cement, which after being prepared for use can be conveyed to any distance prior to using, is produced by the addition of aluminium sulphate and white lead to the known mixture of cement and alkaline carbonate. Magnesia and borax may also be added. In caulking leaks, the cement powder is applied at the leak and the escaping water serves as the hardening-medium. The cement is suitable for damp walls, partitions, &c., for plastering the fronts of buildings, and for foundations in water.

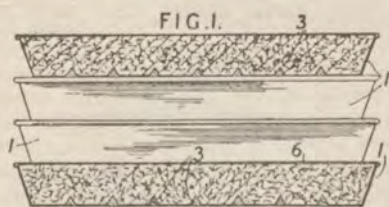
16,028. Hutton, E. F. July 28. Drawings to Specification.

Sound-deadening coverings &c.—A sound-absorbing lining for a telephone casing consists of two thick sheets of felt separated by a lining of thin sheet rubber, leather, &c.

16,247. Sharp, W. D. July 31.

Casting fire-lighters. A layer of sawdust is placed at the bottom of shallow tin or tinned trays 1, which are afterwards filled with melted naphthalene, with a facing of sawdust on the top. The filled trays are provided with covers 6, and are stacked one above the other in a close compartment. Heat is thus retained for a sufficient time to allow the naphthalene to soak into the sawdust

before solidifying. The trays are provided with attached or integral ribs 3, to produce grooves in



the fire-lighter mass so that it may be readily divided.

17,119. Solomon, S. L., and Austin, D.
Aug. 14.

Cements; mortars.—A composition for adding to cements or mortars to render them waterproof consists of lime about 60 parts by weight, fat 30 parts (which may include 1 part of bitumen dissolved therein), and alkaline carbonate or bicarbonate 10 parts. Freshly burnt lime is hydrated, preferably with steam, the temperature is allowed to fall to 300–212° F., and fat, with or without bitumen, is incorporated at its boiling-point. The whole is allowed to stand for an hour in a closed vessel, and is again mixed. The temperature is allowed to fall to about 100° F., and the alkaline carbonate is added. After standing for some hours, the mixture is ground to pass through a sieve of 2500 meshes to the inch. The composition is added dry to cement or mortar in proportions varying from $\frac{1}{2}$ –10 per cent of the cement.

17,340. Phillips, W. A., and Bacon, F. R.
Aug. 18.

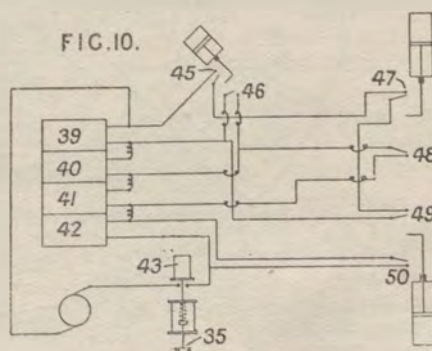
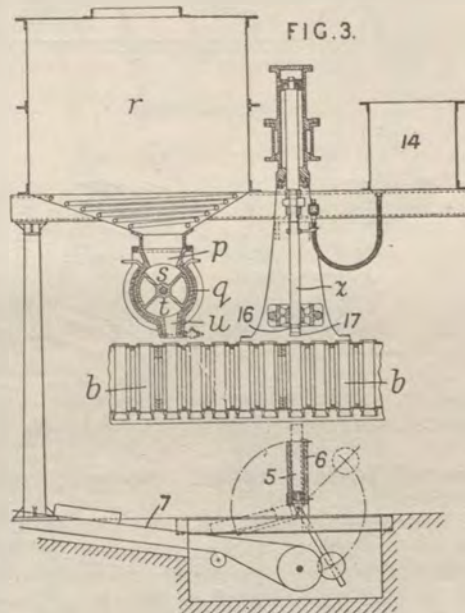
Refractory substances; stone, artificial.—A refractory non-conductor is impregnated with a metal or metallic compound so that the degree of saturation diminishes from the outside towards the centre, the material so formed being applicable for resistances, rheostats, electric heaters, &c., and may also be used for constructional purposes, fire-proof materials, &c. Fireclay is mixed with a binder such as Portland cement or other calcium compound, to which porcelain clay, alumina, silica, and compounds of calcium, aluminium, magnesium and carbon may be added, and is baked to vitrification with or without an internal metal network or sheet for strength. The non-conductor thus formed is treated with molten, volatilized or powdered metal or metallic compounds, such as a mixture of lead and iron sulphides, to which copper or tin may be added separately or together. The conducting-material may be iron, lead, copper, tin, zinc, &c., either pure or as alloys or as oxides, sulphides, phosphides, tellurides, selenides, arsenides, &c., and it may be applied by immersing the refractory non-conductor in the liquid and heating until the metal or compound is absorbed by the non-conductor or the non-conductor may

be surrounded by metallic powder and heated. The outer portion only of the non-conductor may be impregnated with the metallic conductor, leaving a non-conducting core.

17,557. Fraser, J. J.
Aug. 21.

Cements.—A distemper composition consists of white cement (a mixture of magnesium chloride, magnesium oxide and fluorspar), spent lime or lime refuse, preferably that from paper mills, magnesium chloride and a pigment. The composition may be mixed with plastic compositions.

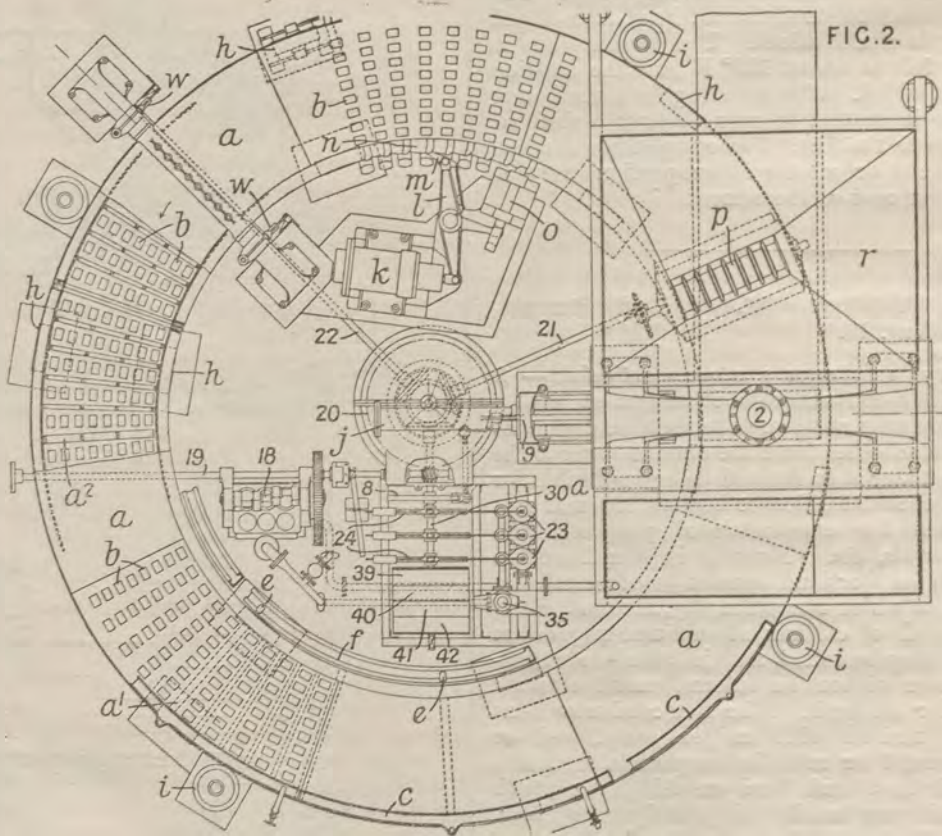
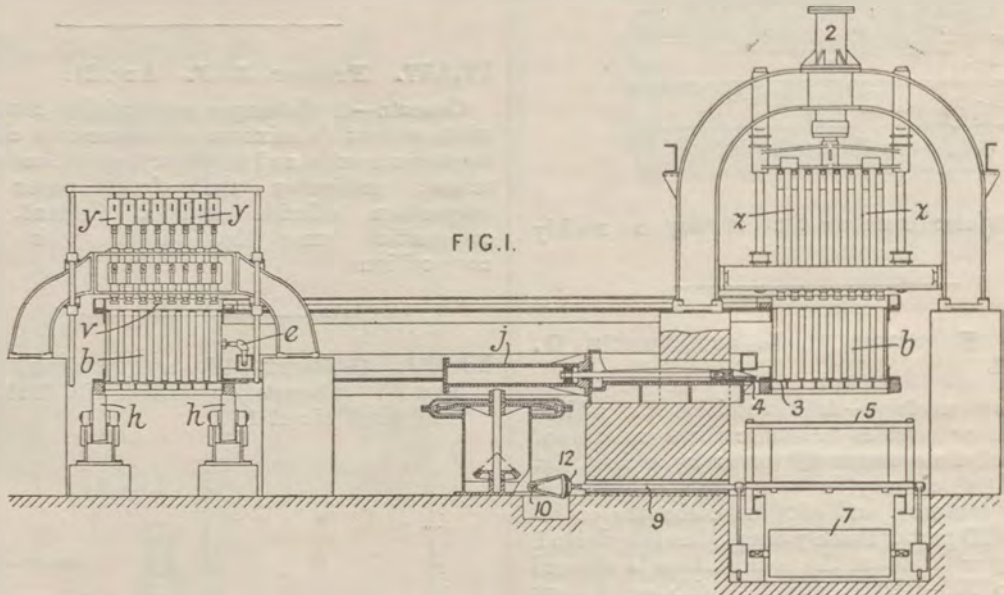
18,031. Gilbert, W., and Ralph, S. J.
Aug. 27. [Cognate Application No. 4956, A.D. 1909, dated March 1.]



Casting.—Relates to a machine for cooling and moulding soaps, oils, fats, stearine, &c., in which the soap is fed into a series of moulds and discharged by plungers. The liquid soap contained in a tank *r* passes through a measuring-device *p*

into moulds *b* which are closed at the bottom by a slide 3. The moulds may be radially arranged in an annular tank *a* containing water or other cooling-medium. The tank may rotate around a

vertical axis, so that the moulds, when filled, come under plungers *v* which are operated to compress the soap and smooth the ends. The moulds then move under other rams *z*, which



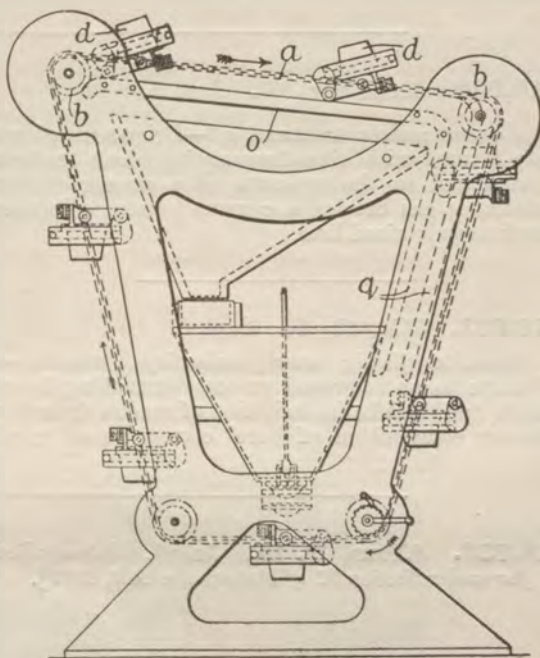
eject the cooled and solid soap into a receiver 5, whence it passes on to a conveyer band 7. The measuring-device may consist of a casing divided into a series of ports *u* corresponding to the moulds beneath, and a rotating measuring-

drum *q* divided transversely into pockets *s*, *t* corresponding to the ports. The device may be steam-jacketed. In another arrangement, the measuring-device consists of tubes having slides or valves, or the moulds themselves may be used as

measures. The tank *a* is divided into sections by hollow partitions *a'*. Water or other cooling-liquid is supplied from a gutter *c* by pipes to the bottom of the partitions *a'*, and is withdrawn from an adjacent section by an outlet at the top of each partition and pipes *e* to a gutter *f*. Intermediate partitions *a''*, which may be hollow plates having the inlets and outlets at the top and the bottom respectively, cause the water to take a circuitous path, the water rising always when in contact with the moulds. The tank may be supported by rollers *h*, *i*, and rotated by an hydraulic slewing-cylinder *k*. This cylinder operates a pivoted lever *l* carrying a spring pawl *m* which engages ratchet-teeth *n* on the inner end of the tank. The tank is held in a stationary position by a locking lever *o*. The rams *v* for compressing the soap are raised by cams *w* on a rotating shaft until a row of moulds stops beneath the plungers. The rams then descend under the action of counter-weights *y*. The rams *z* for ejecting the soap from the moulds are operated by an hydraulic cylinder 2. These rams are provided at the ends with a rubber pad 17, and have also pads 16 which are moistened with brine supplied from a tank 14 through a central passage in the ram. The brine lubricates the moulds to prevent the soap from adhering thereto. Before the rams *z* are operated, the slide 3 is withdrawn by an hydraulic cylinder *j* the piston-rod of which has a hooked nose to engage a projection 4 on the slide. The receptacles 5, into which the bars of soap pass, are open at one side and close against a fixed side 6 as shown in Fig. 3. The receptacles are pivoted so as to be oscillated by the shaft 9. After a bar has passed into a receptacle, this is tilted so that the bar passes on to the conveyer band 7. The shaft 9 is operated through bevel-wheels 12 from a shaft 10 operated through levers by a cam 8 on a rotating shaft 30^a. The hydraulic cylinders *k*, *j*, 2 are operated in succession by three-throw pumps 18 which are driven from a shaft 19 at a constant speed. The shaft 19 also operates a worm-wheel 20, the spindle of which actuates the measuring-apparatus and the rams *v* by shafts 21, 22 respectively. To ensure that the rams come into operation at the correct times, they are fed through valves 23 controlled by cams 24 mounted on the same shaft as an electric controller, Fig. 10, which consists of a circular metallic drum divided into sections 39 . . . 42. Each section is insulated from the others and from the shaft on which it is mounted. Two brushes are in contact with each section of the drum so as to be connected thereby. A portion of each section is insulated so as to interrupt connexion between brushes at the times when switches operated by the rams should be closed. The drum makes one revolution during a cycle of operations and the sections are so arranged in regard to the several operations that, if one operation is not completed at the allotted time, the circuit is broken and a solenoid 43, becoming de-energized, allows a valve 35 controlling the flow of water from the pumps to close. On the completion of the stroke of each ram, a projection on its cross-head closes one of the switches 45, 46, 47, 48, 49, 50. In a modification, a circular series of

radial moulds extending across the tank produces slabs of soap &c. The soap may be cut up by wire cutters as it is forced out by the discharging-plungers. In another arrangement, the tank is fixed and the feeding and ejecting-mechanism are moved around the axis of the tank. Each mould may be provided with a ram to eject the cooled product upwards.

18,158. Stubbs, W. Aug. 29.



Casting pottery. In a machine for casting pottery, such as is described in Specification No. 4806, A.D. 1908, the moulds *d*, instead of being mounted on a rotating cylinder, are carried by an endless chain &c. *a* passing around suitably-disposed rollers *b*. A cam *g* retains the moulds in an inverted position after they have passed the tilting-cam *o*.

18,199. Purcell, M. F., Ryan, J. H., and Polglase, C. J. Aug. 31. Drawings to Specification.

Cements.—The residue from the treatment of sewage matter in an internally-fired kiln is used as a cement, or in the manufacture thereof.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specifications No. 629, A.D. 1885, No. 14,253, A.D. 1890, No. 1567, A.D. 1892, No. 3272, A.D. 1895, No. 23,562, A.D. 1898, No. 21,921, A.D. 1899, and No. 15,720, A.D. 1900, [Abridgment Class Gas manufacture].]

18,345. Lake, W. E., [*Spackman Engineering Co., H. S.*]. Sept. 1. [*Patent of Addition to No. 10,110, A.D. 1908.*]

Cements.—Separately-prepared calcium aluminate or similar accelerating materials are mixed with cements, such as lime or similar earthy alkali material, or with cements that comprise available lime or similar earthy alkali mixed or combined with siliceous matter, such as silica clays or shales, or with puzzuolanic material, such as tufa, trass, infusorial earth, gaize, slag, or silicates of calcium or other material. A portion of the calcium aluminate may be replaced by magnesium

aluminate or calcium ferrate and controllers, such as calcium sulphate, glue, starch, or molasses and hydrated lime or other earthy alkali may be added. The aluminate may be made by calcining finely ground lime and bauxite or other alumina compounds, preferably in such proportions as to yield a compound containing 1 to 3 molecules of lime to 1 of alumina. Specification No. 10,312, A.D. 1888, is referred to.

18,680. Lessing, W. Sept. 5.

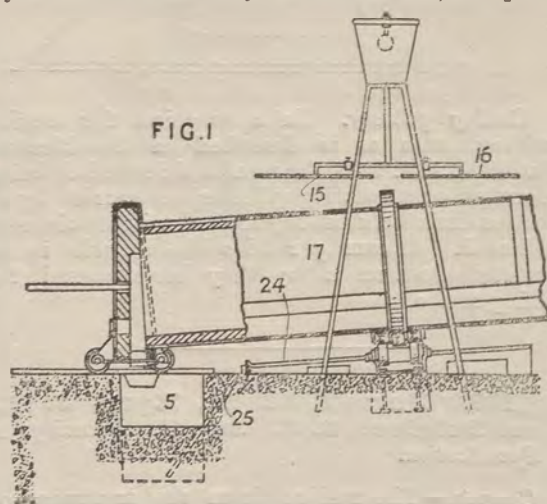
Cements; slags, treatment of.—Briquettes of ore are formed with blast-furnace slag which has been granulated in the presence of a stream of air, steam, or gas bearing a cement-forming substance such as pulverized lime.

18,681. Riesch, A. Sept. 5.

Stone, artificial; stone, colouring; cements.—Relates to an improved process for making floors, slabs, and the like in imitation of marble from the known composition of Sorel cement, wood meal,

mineral filler, and colours. Instead of kneading the whole together as heretofore, a mixture of magnesium oxide, say 9 to 12 parts, sawdust 20 to 36 parts, and mineral filler, such as lime or asbestos, 1 to 6 parts, is moistened with just sufficient magnesium chloride, say 6.25 to 10 parts, and 7.75 to 10 parts of water, to form granules when gently stirred. The colouring-mass, consisting of colour, magnesium oxide, and mineral filler, is then dusted over the granules in such a way that the colours do not mingle, and the mass thus prepared is spread over a suitable ground, and the granules are flattened out so that the colour fills the interstices and gives the appearance of natural veining.

18,738. Allan, F. M. July 1, [*date applied for under Section 91 of Patents &c. Act, 1907.*]



Cements.—Rotary cement-kilns are cooled in the

neighbourhood of the burning zone 17 by allowing a film of water, preferably charged with lime and lime salts so as to form an external scale, to trickle over the surface from sprinklers 15, 16, thus inducing a deposit of clinker which protects the kiln lining. The water that drips from the under surface of the shell is collected by a tray 24 and delivered by a gutter 25 to the clinker pit 5 to assist in cooling the clinker.

18,743. Boulton, A. J., [*Coln-Musener Bergwerks-Aktien-Verein*]. Sept. 7.

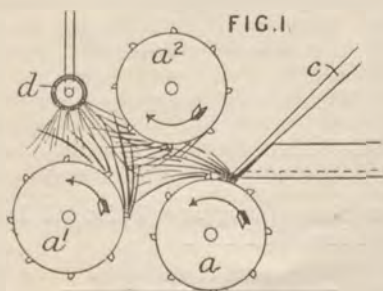
Stone, artificial; stone, preserving.—Bricks, shaped stones, and the like are moulded from a mixture of slag solidified in the open air and slag granulated in water, with or without lime. The moulded blocks are hardened by a gas containing carbonic acid.

19,070. Lessing, W. Sept. 10, 1907, [*date applied for under Section 91 of Patents &c. Act, 1907.*]

Slags, treatment of.—Slag cement is manufactured by atomizing the melted slag by means of a series

of disintegrating-drums *a, a', a'',* and adding thereto cement-forming admixtures, such as lime,

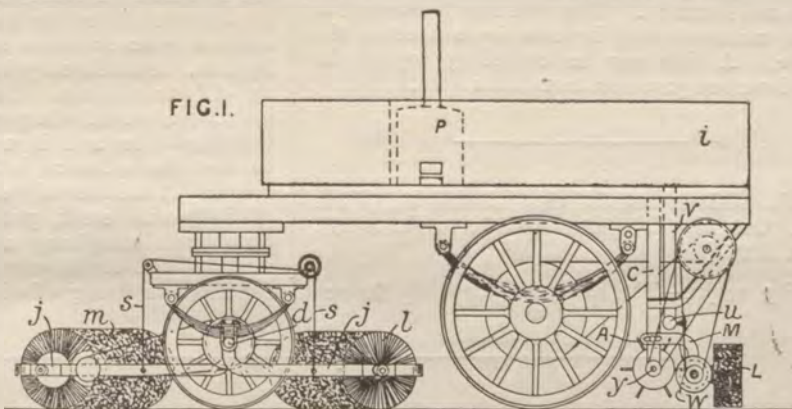
clay, or marl, either immediately before or during the atomizing operation. A shoot *c* may be used for this purpose. The product may be finally



cooled by means of a liquid sprayer *d* for example, preferably supplying lime-water, lime-lye, or other alkaline solution.

20,289. Ames, R. Sept. 26.
[Patent of Addition to No. 7236, A.D. 1907.]

Asphalts.—In a vehicle for distributing tar &c. on roads, the tar tank *i* is heated by the circulation of water from a boiler *P* through pipes within the tank.



20,692. Gessner, E. Oct. 1. *Drawings to Specification.*

Casting.—A toy mould-box is adapted to contain an elastic mould made in two parts, the elastic mould being of such thickness that it can, after removal from the box, be easily pulled off the casting. The Provisional Specification also describes a toy box containing a rubber or rubber-lined mould, and accessories, such as models, a bag for the casting-material, and a mixing-dish, spatulum, brush, colours, &c.

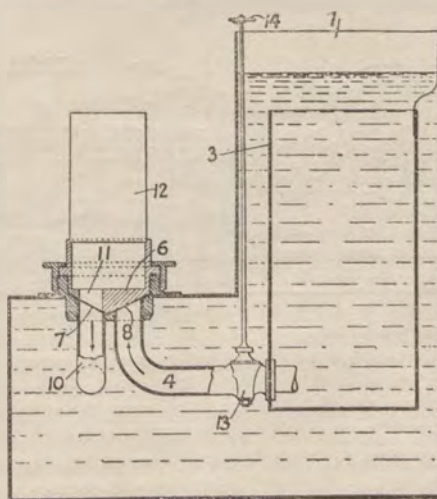
20,699. Rummel, H. F. Oct. 2, 1907,
[date applied for under Section 91 of Patents &c. Act, 1907].

Casting.—Cylindrical phonograph records are cast by running molten wax from a vessel 3 placed within a larger vessel 1, through a pipe 4 having a tap 13 controlled by a wheel 14, and through a valve 6 having an opening 11 to correspond either with an inlet 8 or an outlet 7, and into a matrix or mould 12. When the wax has cooled to a sufficient thickness, the valve 6 is rotated to allow

20,263. Martyn, A., and Gill, J. E. Sept. 26.

Casting.—Patterned sheets for upholstery, book-binding, wall coverings, &c. are produced by using a sheet of figured rolled glass. The glass is first coated with a thin solution of wax or talc, and is then evenly spread with a composition composed of gelatine 6 lb. and glycerine 4 lb., to which may be added soap 4 oz. and boiled oil 4 pints, these being melted with hot water to make two gallons. To render the composition insoluble, 10–20 per cent formaldehyde solution is added in the proportion of 1 oz. to a quart of the composition while the latter is in a fluid state. A layer of muslin, canvas, paper, &c. is laid upon the composition spread on the glass, and covered with a second layer of composition, and, when the sheet is sufficiently dry, it is removed. Chromic salts may be used in place of the formalin, and these substances may be added after the composition has been placed on the glass.

the spare wax to pass through an outlet pipe 10 into another vessel.



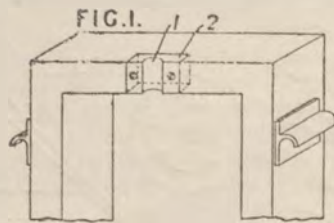
21,239. Day, E. T. Oct. 8.

Stone, artificial.—Substitutes for lithographic-stones are formed by treating a raw hide so as to give it the required hardness, porosity, and surface texture, the flexibility of the hide permitting it to be used for both rotary and flat-bed machines. The hide is treated so as (1) to fill it up with a substance insoluble in water to make it solid and to prevent swelling when in use, (2) to close its pores with a substance such as gelatin, (3) to harden it, and (4) to level and polish it. The filling is effected by steeping a dried unbaired hide in a saturated solution of barium chloride, drying, and again steeping in the solution. After natural drying, the hide is steeped in a dilute solution of sulphuric acid. The hide is next dried on a frame &c., and when dried is rubbed with sand or glass paper. It is then treated with a solution of gelatin, and hardened by means of formalin. After drying, the hide is again treated with glass paper, and levelled with a fine polishing-powder such as powdered glass. It may be treated again with gelatin and formalin. The hide may be steeped in barium carbonate and hydrate instead of in the chloride. A hide may be treated by any of the above described processes more than once.

21,822. Bioram, A. G., [*Jacobi, A., (Firm of)*]. Oct. 15. [*Patent of Addition to No. 18,253, A.D. 1907.*]

Casting soaps.—The air vent for soap frames

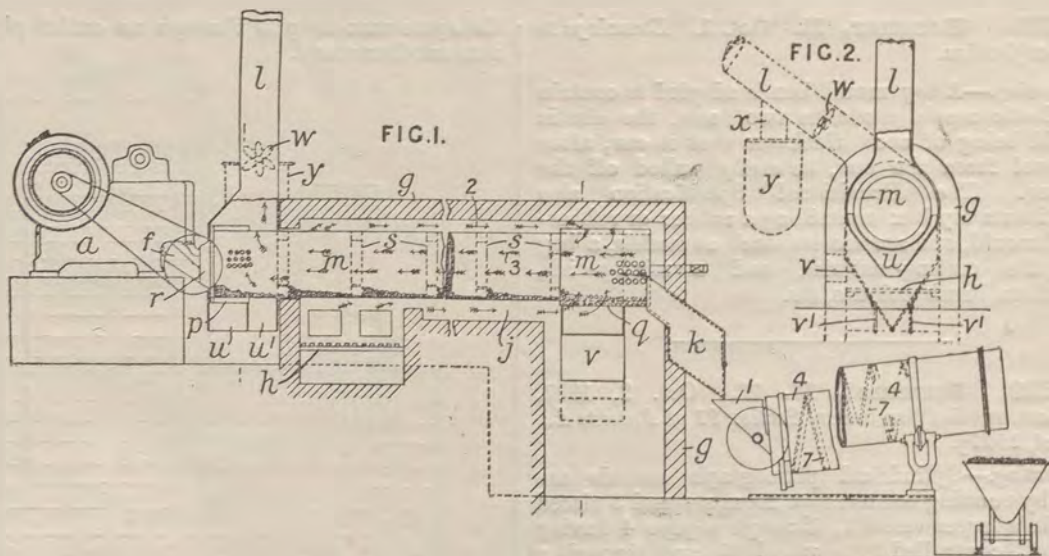
described in Specification No. 18,253, A.D. 1907, is arranged at one side of the frame, and in the form



shown consists of a groove 1 formed in a metal plate 2 let into the frame.

22,111. Schudt, H. Oct. 26, 1907, [*date applied for under Section 91 of Patents &c. Act, 1907.*]

Stonework, ornamental.—Multi-coloured designs are produced on walls, ceilings, and other surfaces, by coloured glass or stone particles which are secured by an adhesive capable of being hardened by heat. Stencils may be employed for applying the different colours. The adhesive is first applied through a stencil, the powdered glass or stone is then blown on, and the whole is heated by a flame to dry the adhesive before applying the next colour. A suitable adhesive consists of a mixture of infusorial earth, potash, size, and powdered glass with colophony and turpentine. This is made of the consistency of putty and is thinned for use by a strong solution of soap in water.

22,595. Baxter, W. H. Oct. 24.

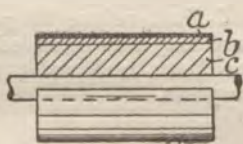
Asphalts.—Relates to an arrangement of apparatus for drying, screening, and tarring broken stone &c. for road making. The drying-apparatus

comprises a cylinder *m* rotated within brickwork *g* forming the flue *j* of a furnace *h*. The furnace gases follow the direction of the arrows 2, 3 around

and through the cylinder, from which they pass to a chimney *l* with a suction fan *v*. The stone from a crusher *a* passes down a shoot *f* through a circular hopper *r* of the kind described in Specification No. 8503, A.D. 1901, [*Abridgment Class Grinding, crushing, &c.*], into the cylinder *m*, which is divided into compartments by internal rings *s* constructed as described in Specification No. 28,156, A.D. 1907, [*Abridgment Class Sifting &c.*], for passing the stone from one compartment to the next. The compartments at each end are perforated for removal of dust and are surrounded by additional screens *p, q* constructed as described in Specification No. 3802, A.D. 1902, [*Abridgment Class Sifting &c.*], and communicating with hoppers *u, u', v*. The hopper *v* has drop doors *v'*, Fig. 2, which prevent any inrush of air into the cylinder *m*. The hopper *u* communicates with the chimney *l*, which may be vertical or inclined as shown in dotted lines in Fig. 2, in which latter case a pendent pipe *x* may carry a bag *y* to catch the dust. The dried stones pass through hoppers *k, l*, to be mixed with heated tar in an inclined rotary cylinder 4 fitted with a conveying-blade 7 arranged as described in Specification No. 17,825, A.D. 1900, [*Abridgment Class Metals and alloys*].

22,743. Jack, C. Nov. 2, 1907, [date applied for under Section 91 of Patents &c. Act, 1907].

Stone, artificial; stone, preserving.—In a machine for printing on wallpaper, wax cloth, and linoleum the printing-rollers are formed of artificial stone. The rollers are formed of layers of varying hardness, so that the raw product can be easily turned in a lathe, and the finished product can be easily engraved and hardened; the core proper is of a harder material. The roll consists of three layers *a, b, c*, of which the core *c* is formed of lime-sandstone, and the layer *b* is made softer by the admixture of sawdust. The outer layer *a* contains more sawdust, and is easily removed in a lathe. The layer *b*, when turned true, is engraved, and is then hardened by being coated with cement to which is applied powdered porcelain or metal powder, and the roll is then heated in a stove. When a new pattern is to be applied, the outer layer is removed by heat, and the roll *b* is turned in a lathe.



23,010. Loke, J. J. Oct. 29.

Stone, artificial.—Tiles, slabs, and other finished products of hard material are formed from titaniferous ore or sand containing magnetite, hematite, or ilmenite. The ore is first pulverized, and the combined iron and titanic oxide particles are separated from the gangue by means of a magnetic or other separating process. The

separated material, with or without the addition of silica, is then melted in an electric or other furnace and cast in suitable moulds. The pulverizing and separating operations may be omitted when the ore contains a sufficiently high percentage of iron and titanic oxides. The slabs are adapted for paving and may be cast with polished or roughened surfaces and either plain or with interlocking projections and recesses.

23,071. British Thomson-Houston Co., [*General Electric Co.*]. Oct. 29. Drawings to Specification.

Refractory substances.—A tube for an electric furnace consists of alumina, and may be made by fusing the material electrically, or by mixing the powder with a binder such as tar or paraffin, baking, and firing at a temperature of 1400°–1500° C. in a vacuum furnace.

23,264. Marks, E. C. R., [*Schaar, A.*]. Oct. 31.

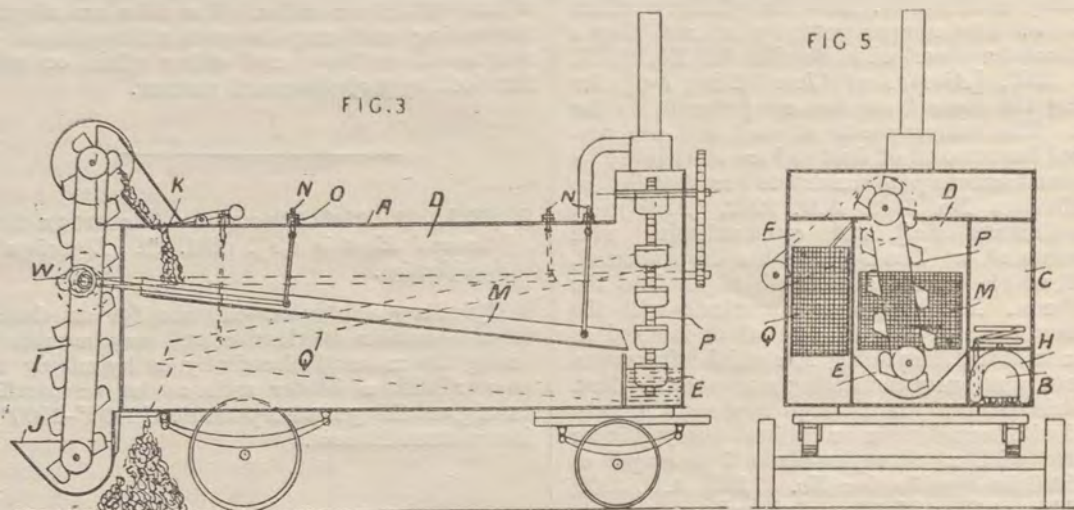
Sound-deadening coverings and compositions.—An elastic composition for filling tyres or cushions, for use as an insulator for electricity, heat, vibration or sound, and as a substitute for rubber, is made by dissolving one or more suitable colloids in glycerine, and adding to the solution salicylic acid, tannin, hexamethylenetetramine, and "lysoform" (a mixture of about equal parts of soap solution and formaldehyde). As an example, 1 part by weight of a colloid such as tjan-tjan (Japan glue) is dissolved in from 2 to 6 parts of glycerine, and to this solution are added from 2 to 3 per cent of salicylic acid and from 1 to 2 per cent of tannin. This mixture, preferably just before charging into the tyre, is heated to 70°–80° C., and from 2 to 12 per cent of lysoform, and from ½ to 1 per cent of hexamethylenetetramine are added.

23,280. Ames, R. Oct. 31.

Asphalts.—In portable or stationary apparatus for making tarred macadam, the stone passes down one or more inclined jigging-screens in the drying-chamber and falls into a tar well, from which it is elevated to a jigging-screen to drain off the excess of tar. The apparatus comprises a chamber A divided into compartments containing a fire-box B and boiler H, a tar tank C heated by steam or hot-water coils from the boiler, a drying-chamber D, a tar well E and a draining-chamber F. The stone is raised from a boot J by an elevator I with perforated buckets and passes by a weighted flap door K to the screen or screens M which are adjusted by screws N in the chamber D and are driven from

eccentrics W. From the tar well E an elevator P with perforated buckets raises the tarred stone on to a similar screen Q in the draining-chamber F. The chambers D, F are heated by steam or hot-

water coils or by hot gases from the fire-box drawn through by a fan. The working parts of the apparatus are driven from a portable engine or tractor.

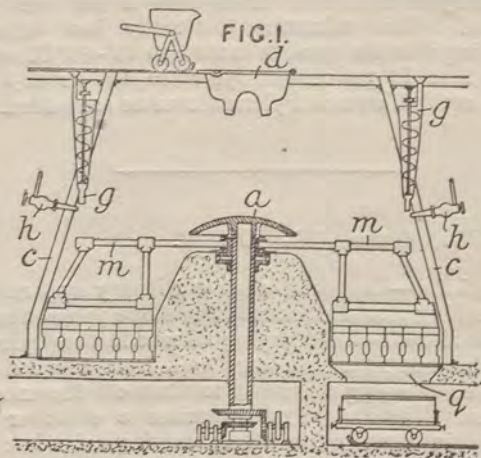


23,433. Fraser, J. J. Nov. 3.

Fire-proof compositions.—A fire-proof composition is composed of powdered peat-moss, preferably 40 parts, spent lime 10, magnesium-chloride solution 11, magnesia 9, spent shale 10, slag 10,

and alum refuse 10 parts. Sodium silicate and sand may also be added. The composition is used for floors and walls, and for paving and other purposes.

23,988. Rhodin, J. G. A. Nov. 9.



Cements; slags, treatment of.—In the manufacture of slag cement, molten slag is fed from a distributor *d* on to a revolving table *a*, by means of which it is disintegrated and scattered within a water-jacketed chamber *c*. This chamber is filled

with dry particles of a chemical salt, such as iron sulphate, injected by means of powder feeders *g* and air jets &c. *h*. The product is removed through a hole *q* by means of rotary scrapers *m*, and is carried to the usual grinding-plant. According to the Provisional Specification the positions of the slag and powder distributors are reversed.

23,990. Diamond, B. Nov. 9.

Fire-proof coverings and compositions.—In order to prevent separation of acid in metal salt solutions used for fireproofing wood, waste liquor from the manufacture of sulphite-cellulose is added to the neutralizing-agent. In an example, the sulphite-liquor is diluted, rendered alkaline with soda, and used to neutralize a solution of sulphate of iron, sulphate of alumina, and fluoride of sodium. Lime may in part replace the soda. The solutions obtained may be evaporated to dryness, and the products are capable of being re-dissolved.

24,325. Albon, I., and Parker, W. R.
Nov. 12.

Refractory substances.—Fire-bricks are made by grinding refuse material consisting of old or broken fire-bricks to a fine powder in a mortar pan and adding ground fire-clay and fine sand, preferably in the proportions of about 80 parts by volume of refuse material, 10 parts of fresh fire-clay, and 10 parts of sand. The mass is mixed with water until it is of the consistency of stiff paste, and is moulded into bricks, either by hand, or by machinery without great pressure, and it is then dried and finally burnt in a kiln.

24,718. Kayser, H. Nov. 17.

Cements.—In order to render Portland cement acid-proof an addition is made of infusorial earth or the waste siliceous residue obtained in the manufacture of alum from bauxite.

24,756. Candy, F. P. Nov. 18. *Drawings to Specification.*

Asphalts.—For collecting and drawing-off the hottest tar in the heater of a road-tarring apparatus, a horizontal shield is supported on short legs in the pan and provided with a central vertical gas vent. The suction end of the hose is passed down this vertical tube to draw off the tar from beneath the shield.

25,833. Mecke, P. Feb. 14, [date applied for under Section 91 of Patents &c. Act, 1907].

Cements; mortars; concretes.—Water-tight cement, mortar, or concrete is made by adding to slaked lime, oleate of ammonia and sulphate of aluminium in the order named.

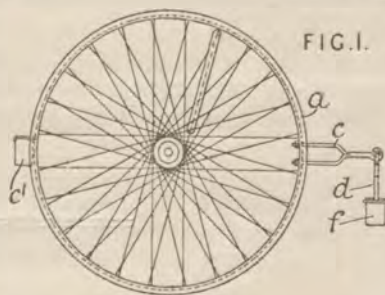
26,416. Wade, J. E. Dec. 7.

Stone, artificial and imitation; concretes; cements.—A concrete or stone cement for making pavements, foot-paths, partition walls, &c. is made by mixing crushed black marble (preferably that obtained from Poolvash, Isle of Man) $2\frac{1}{2}$ lb, crushed black limestone shale $2\frac{1}{2}$ lb., a black pigment such as drop black $1\frac{1}{2}$ lb., Portland cement $2\frac{3}{4}$ lb., and sufficient water. For pavements and the like, $1\frac{1}{2}$ parts of the marble are mixed with $1\frac{1}{2}$ parts black limestone and 1 part cement, the colouring-matter being omitted. Slabs may be made, or the materials may be mixed dry and formed in situ.

26,455. Vereinigte Porphyry Werke Ges. July 16, [date applied for under Section 91 of Patents &c. Act, 1907].

Cements.—A coating for walls, floors, &c. is manufactured from quartz or sand, cement, lime,

magnesia, and mica, with or without other materials such as stone-dust. The proportions preferred are stone-dust 60 parts, quartz or sand 15, cement 10, lime 5, magnesia 5, and mica 5 parts. The composition may be used as an imitation of granite or sandstone.

27,018. Waner, G., and Hoffmann, L.
Dec. 12.

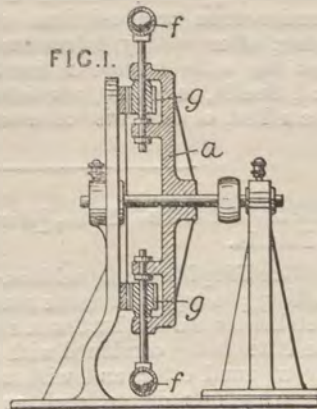
Casting.—Dental crowns, bridge-pieces, suction-plates, and teeth are cast centrifugally. The mould *f* is attached by a stirrup *d* to a hook *c* carried by a wheel *a* rotatable by a handle on an axis fixed to a table wall, or standard. The mould is counter-balanced at *c*¹. Only the lower part of the stirrup is made thin enough to pass through the opening of the hook to prevent accidental disengagement. The wheel may be replaced by a beam or sector and a brake may be fitted for arresting the wheel after making a cast.

27,225. Levene, S., and Harris, S. M.
Dec. 15.

Fire-proof compositions.—A solution for rendering fabrics and other articles non-inflammable is prepared by dissolving 16 oz. of ammonium chloride and 8 oz. of ammonium sulphate in 8 pints of water at 60° F. One or more of the following ingredients may also be added: talc $\frac{1}{4}$ oz., alum 3 oz., and borax $\frac{1}{4}$ oz.

27,733. Bach, P. Dec. 21.

Casting.—Completely closed hollow bodies are cast by a centrifugal machine. The moulds or mould supports *f* are carried by axles radially arranged in a rotating disk *a* and are at the same time rotated about these axles by wheels *g* meshing with a fixed crown-wheel.



27,902. Medvecsky, S. von. July 29.

Fire-proof compositions.—A fire-proof composition is made by adding to moist concrete material, kaolin, soapstone, and ashes, lava, or pumice-stone. Water is added preferably in the form of steam. In an example, to $2\frac{1}{2}$ parts sand and $1\frac{1}{2}$ parts Portland cement are added 1 part kaolin, 0.34 parts soapstone, and 0.16 parts pumice-stone, ashes, or lava. Clay may replace some or all of the concrete. The composition is moulded and allowed

to harden without burning. When a porous product is required, .05 parts of a salt, such as common salt or borax, or lime is added to the sand.

28,056. Rylance, J. Dec. 24.

Fire-proof compositions.—Fabrics are rendered non-inflammable by impregnating them with a solution containing ammonium sulphate, aluminium sulphate, and manganese sulphate.

APPENDIX.

The following abridgments should be inserted in place in the present volume.

A.D. 1905.

95. Netzkar, G., and Fischer, J. Jan. 2.
Drawings to Specification.

Plaster compositions.—Letters and designs in relief for advertising and other purposes are moulded from a plastic mass composed of alabaster-gypsum, dextrin or glue, cork-flour, pumice-stone, and cellulose or wood-pulp. The letter, after setting, is removed from the mould, and the outer surface is treated in an oil bath, and, finally, is glazed, varnished, plated, bronzed, enamelled, or otherwise ornamented.

3070. Marks, G. C., [New Jersey Patent Co.].
Feb. 14.

Wax-like plastic compositions.—A composition for making phonograph records consists of one or more metallic soaps and a hard wax such as carnauba wax, the latter being combined with stearic acid to form a compound ester, and with non-hygroscopic and colouring ingredients, such as ceresin and lamp-

black, respectively. In making such a composition, a water solution of sodium carbonate and sodium aluminate is gradually added to commercial stearic acid in the liquid state, the temperature of the acid being raised to correspond with the increased melting-point of the mixture. The carnauba wax is then added, and the temperature raised to about 230° C. and maintained until all foaming ceases. The ceresin and lamp-black having been added, the congealing temperature of the mixture is regulated by adding free stearic acid. Specification No. 1439, A.D. 1901, [Abridgment Class Electric telegraphs &c.], is referred to.

3992. Röhl, W. Feb. 25.

Bituminous plastic compositions.—A paving-composition consists of equal parts of pit asphalt powder soaked with benzine, and a mixture of magnesite with gravel, sand, porphyry, small slag, or the like, the latter being stirred to a paste with

a 45 per cent solution of magnesium chloride. The mixture is spread cold.

[Reference has been directed under Patents Act, 1902, to Specifications No. 7270, A.D. 1892, and No. 14,336, A.D. 1892.]

4131. Whalley, A. Feb. 28.

Bituminous plastic compositions.—A composition for covering electric cables is prepared by vulcanizing a mixture of bitumen and cotton-seed pitch, or oil residue.

4295. Thompson, W. P., [Byrne, W. H., and Dunbar, G. B.]. March 1.

Bituminous and resinous plastic compositions.—Resin or pine tar is melted, and litharge, shellac, Portland cement, and sand or brick dust are stirred in, and then fibre, equal in bulk to the melted mass, is added, with or without pigments. The fibre may consist of wood pulp, cotton, or paper pulp. Suitable proportions are:—resin 16 parts, litharge 6 parts, shellac 2 parts, cement 8 parts, and sand or brick dust 32 parts. The composition is used for umbrella and like handles, pillar caps, cornices, and ornamental work generally.

5984. Price, E. F., Cox, G. E., and Marshall, J. G. March 21. *Drawings to Specification.*

Refractory substances.—The electrodes of an electric furnace are surrounded by a cement consisting of ordinary asbestos or furnace cement mixed with ground bituminous coal and siloxicon.

6693. Bölling, F. March 29.

Refractory substances.—One or more pieces of carbon are shaped as required for any particular articles, such as grindstones and electrodes for electrolysis or batteries, and then embedded in powdered amorphous boron or silicon carbide, and finally fired, whereby the carbon becomes converted into boron or silicon carbide, and is ready for use. To form a tube, the treatment is stopped before the carbon rod used is converted throughout, the central unconverted portion of carbon being subsequently burned out. An electric furnace similar to that used in the production of carborundum may be used, having firebrick walls, and filled with materials rich in silicon or boron, through which the electrodes pass, and embedded in which are the carbon articles to be treated. A carbon pencil or fine-grained carbon forms the resistance to heat up the material.

6936. Castle, P. C. D. April 1.

Resinous and oily plastic compositions.—Wood pulp, papier mâché, or like substance is steeped in water, and then beaten dry, after which carbolized gum tragacanth and oil are added and the whole is beaten up and moulded under pressure, the moulds being generally heated. The material thus obtained is suitable for picture frames, tables, portable boats, brattice cloths, &c.

7498. Jensen, E., and Schumacher Aktieselskabet, H. April 9, 1904, [date applied for under Patents Act, 1901.] *Drawings to Specification.*

Resinous and waxy plastic compositions.—Insulated supports for air-insulated telegraph and telephone cables are made of powdered porcelain or glass, shellac, and paraffin.

7816. Howarth, C., and Howarth, H. April 12. *Drawings to Specification.*

Resinous and waxy plastic compositions.—The casings of the sound-boxes of phonographs &c. are moulded from a non-vibrant plastic composition, consisting of a mixture of French chalk or pumice powder, kauri gum, and stearin.

13,180. Thiemann, H. June 25, 1904, [date applied for under Patents Act, 1901].

Resinous plastic compositions.—Waste amber is extracted with chloroform, ether, or other solvent, and the solution is distilled to separate the mixture of α and β resins, which is mixed with succinic acid to imitate the cloudiness of natural amber and with resins, e.g. brittle amber or copal. The product is moulded under great pressure and at a high temperature.

13,735. Gibbs, W. July 4. *Drawings to Specification.*

Oily plastic compositions.—Tyres are moulded from ground cork and rubber, or rubber solution, or from ground cork and oxidized linseed oil. The materials are kneaded together between rollers.

15,770. British Thomson-Houston Co., [General Electric Co.]. Aug. 1.

Oily plastic compositions.—Elastic conductors are insulated as described in Specification No. 4346, A.D. 1903, [Abridgment Class Electricity, Conducting &c.], but the material used for coating the conductors is Chinese or Japanese wood oil instead of linseed oil. This oil is obtained from the seeds of *elæococca vernicia* or *aleurites cordata*,

and may be applied to the wire direct after thinning with some solvent, or it may be mixed with zinc or lead oxide, asphaltum or other materials, or thickened by heating for about one hour at a temperature of about 450° F.

15,818. Le Maitre, R. A. Aug. 2.

Oily and fatty plastic compositions.—An agglomerant for use in making plastic compositions is formed by the molecular condensation of mineral oils, preferably those of high density such as the residue from the distillation of mineral oils. The condensation is brought about by the usual condensing-agents, baryta, calcium hydrate, sodium hydrate, zinc chloride, or aluminium chloride, together with nitrated, chlorinated, or oxidized compounds obtained from organic substances such as suint, cholesterolin, or raw lanolin, blood, excremental substances, meat refuse, &c. In an example, suint or raw lanolin is treated at a high temperature with a mixture of sulphuric acid and nitric acid, alkali is added, and the resulting mass is compressed and dried. The product is added to heavy mineral oil in a closed boiler together with baryta or caustic lime, and the boiler is heated until the mixture is resinified. The mass is moulded and dried. The agglomerant may be dissolved in naphtha, carbon bisulphide, carbon tetrachloride, &c.

16,182. Soc. Anon. des Combustibles Industriels. Dec. 19, 1904, [date applied for under Patents Act, 1901].

Bituminous and oily plastic compositions.—Relates to the manufacture of agglomerants. Tar, naphtha, and like hydrocarbons are simultaneously oxidized and distilled by first heating the hydrocarbon to a suitable temperature, and then passing through it dry hot air, free from carbonic acid and enriched or not with oxygen or ozone, the distillation being completed by the heat generated by the exothermic reaction. The temperature of the air is about 20° C. below that to which the hydrocarbon has been heated and is generally about 350° C. When ozone is used, the temperature is not sufficient to decompose the ozone. The temperature used may be further lowered by operating *in vacuo*. The residues form a plastic oxidized pitch or a resinified tar, suitable for use in the manufacture of agglomerates. Among the substances which may be treated are coal-tars, wood tars, naphtha, naphtha residues, and schist oils.

16,744. Kochmann, C., and Kaufmann, J. Aug. 18.

Wax-like plastic compositions.—A mixture of

carnauba wax and alum, with or without fillers, is used in the manufacture of rubber substitutes &c. Drying or other oils or oil residues may be added.

18,683. Milburn, A., [trading as Firsoline Manufacturing Co.]. Sept. 15.

Bituminous, or resinous, and fatty plastic compositions.—Consists essentially of tallow or the like, oil, resin, an inert absorbent substance, and a mineral colouring-matter. The preferred composition contains tallow, fir or pine oil or pine varnish, gum kauri, Stockholm tar, plaster of paris, and zinc oxide. The composition is stiff when cold and is applied hot.

19,381. Charleston, D. Sept. 25.

Resinous plastic compositions.—A composition for closing punctures in the air tubes of pneumatic tyres or other inflated rubber bodies or elastic tubes consists of gum ammoniacum 40 per cent, gum thus americanum 19.85 per cent, water 40 per cent, and pyoktanin (methyl violet) .15 per cent. In lieu of the gum ammoniacum, one of the following gums may be used: asafoetida, olibanum, copal, oppopanax, mastic, shellac. The ground gums are mixed, the water added, and finally the pyoktanin.

19,616. Schauli, G. Sept. 28. *Drownings to Specification.*

Bituminous plastic compositions.—A galvanic cell is sealed by a composition made of pitch or tar and rubber.

20,882. Lake, H. H., ["Reliefmulerei" Ges.]. Oct. 14.

Plaster compositions.—A composition for forming decorations in relief in walls &c. consists of 47 parts of whitening stirred in water, 3 parts of glue, 5 parts of oil lac, 1 part of alum, and 34 parts of alabaster gypsum.

25,715. Carruthers, E. V. Dec. 11. *No Patent granted (Sealing fee not paid).*

Concretes.—Portland cement 1 part, sand 2 parts, and colouring-matters are used in the manufacture of flooring tiles which are dried but not burnt.

[Reference has been directed under Patents Act, 1902, to Specifications No. 4137, A.D. 1876, No. 19,106, A.D. 1891, No. 10,631, A.D. 1895, [Abridgment Class Moulding &c.], and No. 1231, A.D. 1903.]

A.D. 1906.

173. Rinderknecht, C. Jan. 2. *Drawings to Specification.*

Plaster compositions.—Building slabs or blocks a reformed of a mixture of moss and gypsum or cement with metallic reinforcement.

892. Atkinson, C. W. Jan. 12.

Chalk plastic compositions.—Metallic surfaces such as fuse and switch boxes are insulated by coating the surface with a mixture of finely-divided chalk and sodium silicate solution, and applying a mixture of chalk and ground glass or sand or the equivalent to the wet surface. When the coating has set, which process may be hastened by heat, the operation may be repeated till the covering is sufficiently thick, and finally the surface is damped with sodium-silicate solution. If the outer surface is required to be perfectly smooth, the last coating applied is chalk and sodium silicate alone, and for high voltages the cement may be impregnated with paraffin wax or the like. The composition may be used for cementing small bodies together, for replacing porcelain fuse-carrying tubes, for making resistance units, and in place of slate and the like in manufacturing switch apparatus.

2156. Zelensky, M. Jan. 27. *Drawings to Specification.*

Resinous and fatty plastic compositions.—A mixture of resin, tallow, and sulphur is used for internally coating hollow wood posts and the like.

3162. Jørgensen, H. Feb. 10, 1905, [date applied for under Patents Act, 1901].

Chalk plastic compositions.—A composition for forming comes in imitation lead glazing is obtained by mixing glue, chalk, paper pulp, sodium silicate, and linseed oil.

3333. Cross, T. Feb. 10. *Drawings to Specification.*

Plaster compositions.—Building blocks or slabs of special shape are formed of equal volumes of plaster of paris, coke dust, and teased moss litter.

3344. Connolly, J. Feb. 10. *Drawings to Specification.*

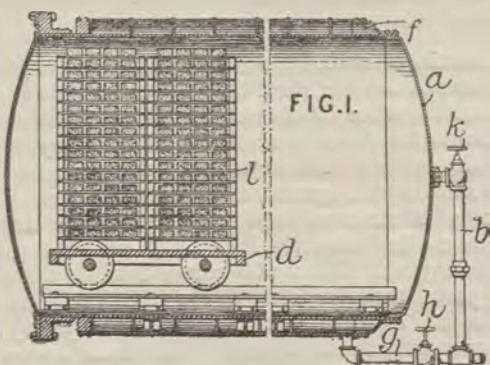
Bituminous, resinous, and oily plastic compositions.—A compound for insulating wires or cables and for coating wires, chains, and the like consists of a mixture of dammar resin, copal, oil of turpentine, and linseed oil, with or without an admixture of soft stearin-pitch, prussian blue, and asphalt. To make a black compound, the ingredients are as follows:—Soft stearin-pitch 1000 to 1400 parts, Syrian asphalt 400 to 500 parts, linseed oil 400 to 500 parts, prussian blue 80 to 100 parts, oil of turpentine 75 to 95 parts, copal 20 to 30 parts, and dammar resin 35 to 45 parts. The linseed oil with half the oil of turpentine is kept in a warm place and frequently shaken in contact with air until sticky. The prussian blue is then added and the whole heated for about 8 hours at about 180° C. The asphalt, stearin-pitch, copal, and dammar resin are melted together for from three to four hours at about 175° C. These two preparations are then mixed and allowed to cool, and the mixture dissolved in about twice its weight of carbon tetrachloride, and the second half of the oil of turpentine added; the mixture is then allowed to stand and is afterwards filtered through cotton-wool. To obtain a white compound, the ingredients consist of dammar resin 270 to 330 parts, copal 220 to 260 parts, linseed oil 680 to 840 parts, and oil of turpentine 280 to 340 parts. The linseed oil is first oxidized in any suitable manner, e.g. by shaking for about eight days with a solution made by dissolving 30 parts of sugar of lead in 150 parts of water, adding 30 parts of finely powdered litharge, boiling for five hours, and adding 150 parts of water. The copal is carefully heated until it melts at about 230° C., is then allowed to cool, and is broken into small pieces. These pieces are mixed with the dammar resin and placed in a small linen bag which is suspended above the oil of turpentine in a vessel provided with a reflux condenser, so that the turpentine is kept boiling until the whole of the soluble part

of the resins has been removed from the linen bag by the condensed turpentine vapour. The solution thus obtained is mixed with the oxidized linseed oil and left in a cool place for about eight days. It is then ready for use, and may be thinned as required by carbon tetrachloride. In some cases, the copal and dammar resin may be replaced by similar gums.

5171. Peard, O. L. March 2. *Drawings to Specification.*

Resinous plastic compositions.—A non-conducting, fire-proof, insulating resilient material consists of magnesium silicate or the hydrated silicates of any of the alkaline earths either alone or in combination with other substances such as ambroin, or the like.

7927. Gordon, A. May 4, 1905, [*date applied for under Patents Act, 1901*].



Stone, hardening.—Relates to apparatus for use in the process in which sand-lime bricks are moulded by the wet process, then subjected to a dry heat by means of a steam-jacket, and finally hardened by means of steam under pressure. After moulding, the bricks, supported on pallets *l*, are stacked upon a truck *d*, which is run into a steaming-chamber *a*. Steam is admitted to a jacket *f* through a pipe *g* by means of a valve *h*, and the drying is preferably carried on for from five to eight hours, with the steam-pressure at about 120 lb. Steam is then passed into the interior of the chamber *a* through a pipe *b* and valve *k*.

8843. Schimansky, H. April 12.

Bituminous and waxy plastic compositions.—A plastic material for connecting lead sheets to form electrotype matrices consists of yellow bees-wax, asphalt dissolved in turpentine, and Venetian turpentine.

10,208. British Thomson - Houston Co., [*General Electric Co.*]. May 1. *Drawings to Specification.*

Mortar-like plastic compositions.—Conductors for electric rheostats, heating-devices, and the like are insulated by embedding them in a plastic insulating-material, such as that described in Specification No. 19,035, A.D. 1905, [*Abridgment Class Electricity, Conducting &c.*]. The material consists of a mixture of silica and a metal hydrate, with or without asbestos or like fibrous material.

10,222. Metz, A. May 4, 1905, [*date applied for under Patents Act, 1901*]. *Drawings to Specification.*

Bituminous plastic compositions.—A composition consisting of bitumen, and granular granite or stone, reinforced with expanded metal or the like, is employed in making slabs and facings for buildings, walls, roofs, floors, partitions, urinals, bathrooms, swimming-baths, tanks, reservoirs, conduits, ships' decks and sides, &c., and for electric and heat insulation.

11,145. Rensch, P. May 12. *No Patent granted (Sealing fee not paid).*

Resinous plastic compositions.—A composition for repairing punctures or porous places in the air-tubes of tyres, air cushions, &c. contains resin, gum arabic, dextrin, copal resin, tartaric acid, tartar, and colouring-matter. To repair a cycle tyre in situ, a mixture of 15 parts by weight of resin, 15 of gum arabic, 15 of dextrin, 10 of copal resin, 8 of tartaric acid, and 5 of tartar is powdered and 5 parts of colouring-matter are incorporated. The mixture is introduced into the air-tube and 125 parts of water are added; the tyre is then partly inflated and the wheel is rotated whereby the defective places are covered with an air-proof crust.

11,366. Plisson, G. May 15.

Resinous and oily plastic compositions.—A heat-resisting and impermeable cement for fixing hairs to brushes, or for other purposes, such as for sealing batteries, is made by mixing lime with linseed oil, then adding resin while heating, and finally adding a mixture of calcium sulphate, zinc oxide, and more linseed oil. The product is solid and is melted before use.

11,686. Wakefield, G. May 19.

Bituminous plastic compositions.—A non-conducting composition for steam-pipes, boilers, and the

like consists of a mixture of 40 per cent clay, 20 per cent tar, and 40 per cent horse dung, old ropes, matting, or other materials such as hemp, flax, or coco-nut fibre. The materials are ground together with water in a mortar-mill, and the paste so formed is applied in layers to the surface to be protected.

12,220. Rendle, J., and Callow, Wright, & Hewlett. May 25. *Drawings to Specification.*

Bituminous and resinous plastic compositions.—A plaster backing for glass tubes consists of bitumen, asphalt, resin, &c., or a mixture of two or more of these, together with sand, pumice, or the like, and, if desired, a fibrous material such as asbestos.

12,447. Janitschek, J. May 29.

Plaster compositions.—A mould for casting metals is made of a mixture of plaster, slag-wool, and ashes of coal or wood, with or without whitening. The mixture is wetted with water or alum solution.

13,355. Suski, S. June 9.

Bituminous plastic compositions.—The Provisional Specification mentions the use for paving-blocks of briquettes made from ground anthracite or ground coal and coal tar or earth pitch, bitumen, asphalt or petroleum waste, oxidized by manganese dioxide, potassium chlorate, saltpetre or other oxidizing-agents.

13,428. Flatau, T. S., and Schellhorn, F. June 10, 1905, [date applied for under *Patents Act, 1901*]. *Void.* [Published under *Patents Act, 1901.*]

Wax-like plastic compositions.—Record cylinders and plates for phonographs or the like are made by coating sheets and cylinders of paper, fabric, metal, mica, or celluloid with a thin liquid mass containing some or all of the following substances, namely, ozokerit, lead oxide, stearin wax, bees-wax, and nigrosine or other aniline dyes, or lac substances, with the addition of chalk, zinc powder, or gelatin. Such thin liquid masses may be used in hardened condition without elastic sheets, if made sufficiently elastic by the addition of gelatin or the like.

15,314. Bishopric, G. F. July 5. *Drawings to Specification.*

Bituminous plastic compositions.—A mixture of asphalt and lime, the residuum in refining sugar, is used in making packing cases, and in covering walls &c.

15,314A. Bishopric, G. F. Jan. 16, 1907. *Drawings to Specification.*

Bituminous plastic compositions.—A mixture of asphalt and lime, the residuum in refining sugar, is used for covering packing-cases.

16,368. Fenton, F. July 20.

Oily plastic compositions.—A rubber substitute is formed by heating a cereal oil, such as maize oil, with flowers of sulphur. The product may be incorporated with rubber, and may be vulcanized.

16,460. Hobbs, F. July 21. *Drawings to Specification.*

Concretes.—Filter-press plates are covered with a composition consisting of cement, preferably Portland cement, sand, salt, and hair or hemp.

16,611. Woof, T., and Murphy, T. July 23.

Bituminous and oily plastic compositions.—A composition for road-making comprises a mixture of tar and oil, such as creosote, petroleum, green oil, or shale oil, the mixture being rendered soluble by boiling with soap and soda. Bitumen, size, or other gelatinous material, shellac, glue, &c. may be added. The solution may be mixed with magnesium-chloride and calcium-chloride solution, glycerine, chalk, a hygroscopic substance, and a disinfectant. Alum, flour, cement, and ammonia may be added.

17,129. Inrig, A. G. July 30.

Bituminous plastic compositions.—Waste leather, raw hides or skins, hoofs, horns, bones, &c. are boiled with an alkali to reduce them to a pulp and then with an acid to neutralize the alkali. The resulting mass is then heated until a substance rises to the surface as a froth, in a similar manner

to that described in Specification No. 25,467, A.D. 1905, [*Abridgment Class India-rubber &c.*], and this substance is removed to a masticator and heated and mixed with a specially-prepared bitumen compound. In the case of raw hides, skins, hoofs, horns, bones, &c., these are treated in a similar manner to the waste leather with the alkali and acid, the resulting mass being powdered and mixed with the specially-prepared bitumen. The latter is formed by heating bitumen with about 20 per cent of petroleum residuum, animal fat, or the like, about 15 per cent of sulphur, and about 10 per cent of glutinous material such as horn, hoof, bone meal, glue, &c.

17,432. Walton, F. Aug. 2. *Drawings to Specification.*

Resinous and oily plastic compositions.—A composition for securing together the fabric parts of tyres is composed of 20 parts of oxidized oil, 2 of kauri gum, and four parts of resin.

17,773. Rouxville, E. A. L. Aug. 7, 1905, [*date applied for under Patents Act, 1901*].

Bituminous, resinous and oily plastic compositions.—Relates to the treatment of terpenes with sulphuric or nitric acid, or with sulphur chloride, with the object of producing a rubber substitute or the like, suitable for electric insulation. When dealing with oil of turpentine, to 100 parts of the latter are slowly added 30–80 parts of concentrated sulphuric acid, the mixture being agitated and cooled meanwhile. The mixture is allowed to stand, is heated if necessary, and, after cooling, boiled with two or three times its volume of water and again allowed to stand. The dark viscid layer is decanted and neutralized with an alkali, and the yellow emulsion formed is precipitated, if necessary, by means of alum or a weak acid, and the product dried by heating to 125° C. It may be further purified by solvents, or by distillation, and may be treated with zinc chloride, alum, tannic acid, or sulphur, e.g. in the form of sulphur chloride. By treating the oil of turpentine more thoroughly, or by adding resin or rubber, previous to the treatment, a product resembling resin is obtained. If desired, the reaction may be commenced with sulphuric acid and finished with nitric acid or sulphur chloride. The Specification in the original form, as published under the Act of 1901, comprises also the manufacture of a gutta-percha or caoutchouc substitute from volatile oils, resins, gums, certain heavy oils, certain tars, and nearly all the solid or liquid hydrocarbons, natural or artificial, and their derivatives and compounds. The process comprises five operations, namely: (1) the transformation proper, by means of sulphuric acid or other "oxidizing" means, (2) the separation of the product by distillation, decantation, &c., (3) the washing and refining by means of water, weak acids, alcohol, or by solution, or distillation, (4) the treatment of the product with heat, zinc chloride,

alum, tannin, sulphur, &c., and (5) vulcanization. The product is used as a varnish, bird-lime, glue, or glaze. This subject-matter does not appear in the Complete Specification as accepted.

17,988. Soc. Anon. le Chryso-Cérame. July 16, [*date applied for under Patents Act, 1901*]. *Drawings to Specification.*

Chalk plastic compositions.—Tiles are made of layers of material having different coefficients of contraction when dried or burnt. A composition having a small coefficient of contraction consists of Fontainebleau sand 608, minium 300, sodium carbonate 50, borax 12, and chalk 30 parts, while a composition having a larger coefficient consists of the above composition together with 1000 parts of additional sand.

19,388. Walter, O. Aug. 30.

Plaster and chalk plastic compositions.—Embossed or relief pictures are backed with a mixture of gypseous alabaster, precipitated chalk, a fibrous material such as filtering-paper, glue, gum-mastic, and pumice-stone. The materials are finely ground and added successively to boiling water with stirring.

19,723. Yates, J. A. Sept. 4.

Resinous plastic compositions.—An electric insulating-composition consists of 32 parts of resin (preferably white resin), 20 of zinc oxide, and 48 of marble flour. The proportions may be varied to suit the various temperatures which the cement may have to withstand. The resin is melted, and zinc oxide is added; the mixture is then heated until fluid and the marble flour is added, after which the liquid mixture is allowed to cool and solidify.

21,290. Johnson, J., and Titley, J. Sept. 26.

Bituminous plastic compositions.—An electric insulating-composition for filling troughs and other conduits consists of clunch or other clay, pitch, and tar mixed together preferably in the following proportions, namely, 42 parts of clay, 52 of pitch, and 6 of tar.

23,124. Frollo, G. Oct. 18.

Resinous and oily plastic compositions.—Water-resisting cements are made of the following ingredients and substantially in the proportions mentioned, namely:—(1) quicksand 100 parts,

colophony 18, barium sulphate 7, tailors' chalk 8, boiled lint oil 20, and water 16 parts, or (2) sand 100 parts, colophony 16, tailors' chalk 15, lint oil 17·3, water 15·8, marble 5·5, and zinc sulphate 1·2 parts. The oil and water are well beaten together, and the mixture of the solids is gradually worked in.

23,851. Ruzicka, F. Oct 26. *Drawings to Specification.*

Lime plastic compositions.—Insulating-rods for arc lamps are composed of a material such as lime mixed with metallic chips, coal gobbing, saltpetre, &c., which is destroyed by the heat contiguous to the arc. Specification No. 11,469, A.D. 1906, [*Abridgment Class Electric lamps &c.*], is referred to.

24,951. Sletcher, W. June 9, [*date applied for under Patents Act, 1901*]. *Drawings to Specification.*

Bituminous, resinous, oily, and waxy plastic compositions.—Adhesives for securing wigs in place consist of (1) resin 14 parts, lead plaster 80 parts, and yellow wax 60 parts; the lead plaster is composed of lead oxide 32 parts, olive oil 60 parts, and sufficient water to form an emulsion; or (2) Burgundy pitch 1 part, rubber 2 parts, and gum-olibanum 1 part. A suitable antiseptic may be added.

27,209. Muller, L. E., and Baraduc, L. H. Nov. 29, 1905, [*date applied for under Patents Act, 1901*].

Refractory substances.—Silicides, produced by the reaction of silicon carbide on a metallic oxide, are agglomerated by means of a fused metal, caoutchouc, magnesium oxychloride, or porcelain clay. The Specification in the original form, as published under the Act of 1901, comprises also the statement that siloxycen may be used instead of silicon carbide, and that the substances produced

may be used for metallurgical purposes. This subject-matter does not appear in the Complete Specification as accepted.

28,492. Castle, P. C. D. Dec. 13.

Resinous plastic compositions.—A mixture of glycerine and gum tragasol is used in making linoleum.

28,689. Soc. Anon. des Combustibles Industriels. April 19, [*date applied for under Patents Act, 1901*].

Bituminous and oily plastic compositions.—Relates to the manufacture of agglomerants. A modification of the invention described in Specification No. 16,182, A.D. 1905, consists in distilling and simultaneously dehydrogenating and polymerizing hydrocarbons by heating them to a suitable temperature and then blowing cold air through the mass, the heating being discontinued and the distillation completed by means of the heat generated by the exothermic reaction. The air may be enriched with oxygen &c., or may be mixed with inert gases, such as carbonic acid, nitrogen, &c., according to the nature of the substance under treatment. The temperature of the reaction may also be controlled by cooling the liquid. The process is applicable to naphthas, naphtha residues, coal tars, wood tars, schist tars, schist oils, &c., and the pitchy residue obtained is suitable for the manufacture of agglomerates.

29,147. Lake, S. Dec. 21. *Drawings to Specification.*

Bituminous and oily plastic compositions.—A cement, composed of asphalt, pumice, and dead oil, is employed in making secondary batteries. In forming this cement, the asphalt is heated until liquid, the oil is stirred in, and pumice is added until a paste is formed.

A.D. 1907.

1383. Mérou, E. Feb. 6, 1906, [date applied for under Patents Act, 1901].

Oily plastic compositions.—Fabrics for hangings or decorative purposes are coated on the back only with a mixture of whitening, zinc white, half-boiled oil such as linseed oil, and a siccative such as linseed oil with litharge, calcined white lead, and talc, and are then stoved.

3913. Popplewell, G. Feb. 16. *Drawings to Specification.*

Cement-sand compositions.—The barrels and heads of bobbins are made of alternate layers of paper and a composition of glue, Portland cement, and sand.

7739. Gates, H. F., [Schreiber, O.]. April 2

Bituminous plastic compositions.—A material for the manufacture of roofing, damp-courses, &c. consists of pitch-like residues, such as those obtained in the distillation of tar or petroleum, oxidized by blowing air through the melted material to which an oxidizing-agent, such as manganese dioxide with or without sulphuric acid or the like, has been added, formaldehyde being finally introduced when the oxidation is complete. The material is stated

to be similar in many respects to india-rubber, and may be formed into sheets.

7759. Carter, H. April 3.

Bituminous, resinous, and oily plastic compositions.—Pipes are covered with a composition consisting of gas-tar, boiled oil, and resin.

7832. Heuer, A. April 3.

Plaster and chalk plastic compositions.—An oil cement for wall coverings consists of 6 parts chalk, 2 parts plaster of paris, 1 part rye meal, 1 part cement, 4 parts linseed oil, 5 parts glue, and 1 part soft soap.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specification, No. 20,882, A.D. 1905.]

9024. Brooke, A., and Brookes', Ltd. April 18.

Bituminous plastic compositions.—Slabs are made of crushed stone mixed with tar.

[Reference has been directed under Section 7 of Patents &c. Act, 1907, to Specifications No. 1795, A.D. 1871, No. 2726, A.D. 1874, [Abridgment Class Moulding &c.], No. 24,812, A.D. 1899, and No. 18,077, A.D. 1901.]

9787. Winter, H. April 26.

Bituminous, resinous, and oily plastic compositions.—A wrapping-material &c. consists of outer layers of paper, cardboard, &c. enclosing a composition

consisting of a mixture of asphalt, pitch, resin, tar, or the like, with liquid or viscous hydrocarbons or oils, such as paraffin oil, vaseline, &c. Talc, heavy spar, road dust, or the like may be added to the mixture.

11,167. Smith, A. A. May 13. *Drawings to Specification.*

Resinous plastic compositions.—Dental matrices are formed of a mixture of shellac with a less friable substance, such as Canada balsam.

11,175. Engelhorn, F. May 13.

Refractory substances.—Ceramic masses or articles composed of compounds of alumina with oxides of metals or of boron, silicon, arsenic, or antimony are made by mixing a composite aluminium oxide (formed by fusing a mixture of alumina or fused alumina with another oxide) in powder with the other oxide or oxides, with or without binding-materials such as dextrin, clay, kaolin, feldspar, &c., and heating without fusing. When zinc or magnesium oxide is used, spinel-like substances are produced. An example is given in which fused chromium-aluminium oxide is mixed with iron and magnesium oxides, made into a paste with water, moulded, and burnt.

15,667. Thom, T. M. July 8.

Lime plastic compositions.—Blocks and slabs are formed with facings of ornamental artificial stone or marble and interiors of rough, inexpensive, and light materials, the whole being moulded and then hardened by treatment with carbon dioxide. The mould is first lined with a plastic mixture of lime and granular stone, and is then filled with coarse material, such as a mixture of limestone and lime ashes. A core, removable or otherwise, may also be inserted. Pressure is applied, and the moulded block is finally carbonated. Slag may be employed in the facing-mixture.

16,567. Malby, G. W. July 19.

Plaster compositions.—A dummy cigar for advertising purposes is moulded from a mixture of glue, plaster of paris, shellac, and whitening, and is covered with paper &c.

17,907. Collin, J. G. H. Aug. 8, 1906, [*date applied for under Patents Act, 1901*].

Concretes.—Slabs are composed of cement and cork, lead dross or ashes.

18,343. Hoyt, W. H. Aug. 13. *Drawings to Specification.*

Resinous plastic compositions.—A facing layer for gramophone disks consists of shellac 40 parts by weight, shoddy 6 parts, asbestos 5 parts, pigment 4 parts, and a mixture of barytes, China-clay, pipe-lay, or the like 45 parts.

22,053. Leishman, T. L. Oct. 7.

Bituminous and oily plastic compositions.—An elastic waterproof composition for use in making axle-box dust shields consists of a mixture of eight parts by weight of elastic stearine pitch; four parts of papier-mâché, wood flour, or ground cork, or a mixture of these ingredients; two parts or less of lime; and one part of oxidized linseed oil, to which colouring-matter may be added.

22,528. Tas, H., and David, J. Oct. 12.

Bituminous plastic compositions.—A plastic composition suitable for waterproofing, and repairing leather, rubber, and like articles, consists of 10 parts oil, 10 wood pulp, 40 asphalt, 10 scrap celluloid, 20 bagasse, 5 gutta-percha, and 5 shellac. The composition can, by omitting the oil and heating to 200° F., be made into blocks.

22,961. Schmitz, J. S. Oct. 17. *Drawings to Specification.*

Plaster or chalk compositions.—A plastic composition to be moulded in situ for forming wall, ceiling, and like decorations consists of 1 part of paste or glue, 1 part of Venetian turpentine, 2 parts of fuller's earth in water, and 4 to 5 parts of chalk, whitening, or fine plaster in milk. Pigments and varnish may be added.

24,586. Hartmann, M., [*trading as Koch Bros.*]. Nov. 6. *Drawings to Specification.*

Plaster and chalk plastic compositions.—A composition for facing wood consists of water 2 quarts, french glue 2 lb., scotch glue $\frac{1}{4}$ lb., and $\frac{1}{2}$ lb. each of China clay, chalk, stearine, and plaster of paris.

25,092. Marks, E. C. R., [*New Jersey Patent Co.*]. Nov. 12.

Wax-like plastic compositions.—A composition for making phonograph records is prepared in a similar manner to that described in Specification No. 3070, A.D. 1905, except that the carnauba is replaced by certain waxes obtained by the distillation of bituminous brown coal known under the trade names of "ebonite" and "montan wax." These waxes may be obtained by means of the process described in Specification No. 5999, A.D. 1900, [*Abridgment Class Oils &c.*]. In an example, 45.4 kilos of stearic acid and 19 kilos of "ebonite" are melted with 3.34 kilos of ceresine at a temperature of 115° C. To this mixture is added a solution obtained by dissolving 184 grammes of metallic aluminium in a solution of 10.25 kilos of soda

crystals and 475 grammes of caustic soda in 15.15 litres of water. The alkaline liquid is added quickly at first but slowly afterwards, the temperature being gradually raised until it finally reaches 232° C. The material is then strained and is ready for use. The congealing temperature may be varied by the addition of free stearic acid.

25,214. Gaven, W. J. Nov. 13. *Drawings to Specification.*

Resinous plastic compositions.—The face of a gramophone record disk is coated with a powdered composition containing 7 parts of shellac, 3 of barytes, 4 of rotten stone, 1 of flock (shoddy), 1 of lamp-black, and 1 of casein. The proportions may be varied, and mica may be added. The whole is subjected to heat and pressure. Specifications No. 18,763, A.D. 1904, and No. 6611, A.D. 1907, [*Abridgment Class Electric telegraphs &c.*], are referred to.

25,614. Covington, E. Nov. 19. *Drawings to Specification.*

Bituminous plastic compositions.—Composite ties for railway sleepers are formed with alternate layers of corn, cane, or like stalks, and a binding preservative composition consisting of corn-stalk pulp, coal tar, slack lime, and creosote or gilsonite, elaterite, or the like.

26,852. Suhr, R. F. H. Dec. 4. *No Patent granted (Sealing fee not paid).*

Resinous and wax-like plastic compositions.—Wax, such as carnauba, is melted and worked with resin, such as gum tragacanth, glue, varnish, turpentine, or the like, in the presence of water. Before cooling, it is subjected to the action of steam, and is then cooled to 60–50° C., kneaded with warm water at 50° C., and finally separated from the water.

28,759. Edison, T. A. Jan. 3, [*date applied for under Patents Act, 1901*]. *Drawings to Specification.*

Bituminous, resinous, and fatty plastic compositions.—Record-cylinders for phonographs are formed of a mixture of asphalt, lead stearate, and preferably a resin gum made as follows: 180 kilograms of commercial stearic acid, having about 5 per cent oleic acid and free from uncombined fats and glycerine, is added to 90 kilograms of resin gum, such as copal, kauri, or colophony, and melted at temperatures ranging from 121–205° C. When melted, 45 kilograms of litharge are added, forming lead stearate and water, the water being driven off as steam. Hard asphalt, such as gilsonite or Egyptian or Syrian asphalt, is then added in varying quantities, and a temperature of 205° C. is maintained until all the products of decomposition are driven off and the material is limpid. The composition is next filtered through layers of muslin, and is then ready for use. Specifications No. 20,767, A.D. 1899, No. 19,903, A.D. 1905, and No. 10,989, A.D. 1907, [*Abridgment Class Electric telegraphs &c.*], are referred to.

A.D. 1908.

537. Berliner, H. S. Nov. 11, 1907, [*date applied for under Section 91 of Patents &c. Act, 1907*].

Resinous plastic compositions.—A phonograph sound-record surface is made by coating a foundation with a fibrous fluid. To obtain this fluid,

barytes, silica, or other earthy or like matter is mixed and heated with any light fibrous material and with shellac or other gum. The hard cold mass is finely ground and brought to a viscous state by the addition of alcohol or like solvent of shellac. Before impressing the sound-record, the surface is heated until plastic.

1935. Monin, A. Jan. 28. *Samples furnished under Section 2 of Patents &c. Act, 1907.*

Plaster compositions.—A mixture of unburnt natural sulphate of lime and natural sulphate of lime burnt at a sufficient temperature, usually about 150° C., to dehydrate it, is used as a substitute for kaolin. The mixture forms a plastic mass when mixed with water, and may be used in the manufacture of india-rubber, &c. According to the Provisional Specification, the mixture may be used in the manufacture of faiences and ceramics. Specification No. 14,177, A.D. 1906, [*Abridgment Class Paper &c.*], is referred to.

2252. Ambrose, A. Jan. 31.

Plaster and chalk compositions.—An adhesive composition for applying to the back of floor coverings, or for incorporating with the fabric thereof, consists of a mixture of calcium sulphate or the like, calcium carbonate or other like salt, and zinc oxide, with india-rubber, gutta-percha, or like elastic gum, and coal-tar naphtha, toluene, or other equivalent solvent.

3572. Wallace, R. W., and Reynaud, G. Feb. 17.

Oily plastic compositions.—Elastic products similar to india-rubber are made by heating a mixture of siccative vegetable oil with resin oil obtained from Xanthorrhoeas (Grass trees, Black-boys, &c.) to a temperature approaching the point of carbonization of the vegetable oil, or linseed or other oil heated to 300° C. is added to the preferably heated resin oil. The product, which may be used alone or mixed with ordinary rubber, can be rendered more elastic by adding essence of turpentine to the other raw materials.

5279. Cohen, E. S. All. March 9.

Bituminous and oily plastic compositions.—The product described in Specification No. 8071, A.D. 1902, [*Abridgment Class Electricity, Conducting &c.*], is heated at a temperature of 160–180° C. with a dried and purified vegetable oil, oxidized or not. The resulting mass, after vulcanization, is kneaded under the influence of heat and pressure. The product resembles vulcanized india-rubber, and may be used for electric insulation, and for adding to india-rubber and gutta-percha. The vulcanizing process may be omitted.

5487. Hennequin, D., and Plagnes, E. April 5, 1907, [*date applied for under Section 91 of Patents &c. Act, 1907*].

Bituminous plastic compositions.—An overlay or

impression printing-surface is formed as follows: The forme is coated with a mixture of white lead, vaseline, and sulphuric ether, and cut-out proofs are stuck on to the various parts of the forme. The whole is then covered with a coating of partly-set plastic composition of sufficient firmness and quick in drying, which may consist of asphalt, powdered white lead, benzine, and ether. An impression is then taken.

10,535. Cohen, E. S. All., Cramer, P. A. M., and Geipel, W. May 14.

Bituminous and oily plastic compositions.—An electric insulating composition consists of a non-liquid mixture of bitumen, solidified petroleum, and an insulating oil. The material described in Specification No. 8071, A.D. 1902, [*Abridgment Class Electricity, Conducting &c.*], may be used with sufficient paraffin or other liquid hydrocarbon to render it semi-liquid at normal temperatures, the liquid being added either separately or during manufacture. Or the quantity of petroleum may be increased relatively to the acetate of aluminium, colophony, or other resin, and alkali which are used for converting the petroleum to a solidified form, as described in the above-mentioned Specification. The specified composition contains 63 per cent of purified asphalt, 18.4 per cent of solidified petroleum, and 18.6 per cent of liquid paraffin.

11,070. Hamlett, F. May 21. *Drawings to Specification.*

Concretes.—Building blocks or slabs are composed of a mixture of coke breeze and plaster, coke breeze and lime, coke breeze and Portland cement, crushed coke breeze, pumice-stone, and Portland cement, crushed pumice-stone and Portland cement, or pumice-stone and plaster.

11,846. Harroway, G. M. June 1. *Drawings to Specification.*

Bituminous and fatty plastic compositions.—Wood blocks for covering floors, decks, walls, ceilings, and other surfaces are secured by an elastic cement consisting of a mixture of two parts of pitch, one part of coal-tar, two parts of tallow, two parts of sawdust, and one part of Portland cement.

14,954. Hof, A., and Pieper, A. July 14.

Bituminous and oily plastic compositions.—Filling-materials, such as stones, slag, volcanic sand, and furnace dust, are heated so as to dry them thoroughly, and are impregnated while still hot with a solvent that can be polymerized, such as crude petroleum, and mixed with asphalt &c., which, through the action of the solvent, penetrates into the filling-material. The mixture

is then thoroughly stirred and heated to 300° C. in order to polymerize the solvent and convert it into a body having similar properties to the resinous binder. The finished mass is moulded into bricks, pipes, vessels, and linings, &c. which are proof against water and acid.

15,145. Pybus, R. H., and Pybus, E. M. July 17. *Drawings to Specification.*

Oily plastic compositions.—In a process for filling tyres with a resilient composition consisting of an oxidizable or vegetable oil and sulphur chloride, the ingredients are separately cooled and mixed in a cooled chamber so as to retard the solidification of the mixture and allow it to be conveniently forced into the tyres. It is stated that when linseed oil is used, 12 per cent by volume of sulphur chloride is a convenient proportion.

15,246. Sendele, A. July 18. *Drawings to Specification. No Patent granted (Sealing fee not paid).*

Concretes.—Flower-pots are formed from a mixture consisting of cement 1 part and sand 2 parts.

16,885. Lake, W. E., [*Standard Varnish Works*]. Aug. 11.

Resinous and oily plastic compositions.—A solid electric insulating compound is made from castor oil, a resinous gum such as colophony, and a fossil gum such as New Zealand gum or gum kauri, or Dutch East India gums such as Manilla gum or Pontiniac gum. The fossil gum and the resin are first melted, the oil is then added, and the mixture is boiled till the mass is thoroughly mixed, when it is allowed to cool. The proportions specified are 100 lb. gum kauri, 25 lb. colophony, and 5 gall. castor oil.

17,845. Equatorial Trading and Manufacturing Co., Muskett, E. A., and Scammell, J. B. Oct. 8, 1907.

Fatty, oily, and wax-like plastic compositions.—Relates to a composition for charging tyres and balls or like elastic articles. Sulphur-chloride, diluted with its own bulk of a hydrocarbon such as paraffin, is added to an animal or a vegetable oil that has been mixed with cellulose in the form of vegetable fibres. The cellulose may have been mixed previously with magnesium oxide and heated. Just before charging the article, a further quantity of sulphur chloride is added, and it then solidifies in about thirty minutes. Specification No. 21,229, A.D. 1901, [*Abridgment Class Oils &c.*], is referred to.

18,349. Reif, N. Sept. 1. *Drawings to Specification.*

Oily plastic compositions.—A linoleum-like substance is made by mixing with powdered cork &c. an oily material termed oil-caoutchouc prepared by heating an oil, such as linseed oil, rape-seed oil, resin oil, &c., or a mixture of oil and tar, for about 15 minutes to 150° C. under a continuous supply of air, and adding melting sulphur and catalytic agents, such as resin, powdered metals, &c., which accelerate the reaction between the oil and sulphur. Before the completion of the reaction the mixture is rapidly cooled, or an anticatalytic agent is added so as to keep the mixture in a liquid form. It is then mixed in a finely distributed condition with the powdered cork &c. in a state of suspension, after which the mixture is passed between heated rollers &c. to vulcanize and harden it. If the final product is to be very hard, small quantities of a vulcanizing or nitrating substance, such as sulphur chloride, nitric acid, &c. is mixed with the oily substance before admixture with the cork &c.

20,529. Johnson, H. W. Sept. 30. [*Cognate Application No. 6917, A.D. 1909, dated March 23.*]

Resinous and oily plastic compositions.—A cement consists of gum sandarach and canade or oregon balsam, with or without gum mastic, refined together, and castor or other oil.

20,868. Prelle, J. H. Oct. 3. *Drawings to Specification. No Patent granted (Sealing fee not paid).*

Plaster compositions.—Slabs are made from a mixture of about 5 parts of cork particles, shavings, or chippings and 1 part of plaster of paris, Portland cement, or a cement of the magnesium oxychloride type.

21,756. Cooper, G., [*Boelling, F.*]. Oct. 14.

Refractory substances.—Bars of carbon, carborundum, carbide, &c., forming resistances for electric heating-apparatus, are placed together in a zigzag, spiral, or other form, or in the shapes of letters or figures, and are connected together by a resistant cement. The end bars of the chain are made thicker than the others, to prevent the supply wires from being melted off. A suitable cement consists of 90 per cent silicon, 3 per cent oxide of titanium, 2 per cent kaolin, 1 per cent felspar, 2 per cent boric acid, 1 per cent calcium oxide, and 1 per cent silicon carbide, the mixture being pulverized, mixed with water, applied to the junction, and fused in an oxy-hydrogen flame.

22,236. Basset, L. P. Oct. 31, 1907, [date applied for under Section 91 of Patents &c. Act, 1907]. Drawings to Specification.

Wax-like plastic compositions.—A conducting-cement for use in galvanic batteries, which is described in the Specification in the original form, as open to inspection under Section 91 (3) (a), consists of a mixture of graphite with sulphur, or paraffin, or celluloid. This subject-matter does not appear in the Complete Specification as accepted.

23,765. Furse, A. D. Nov. 6.

Bituminous plastic compositions.—Paving blocks or slabs are made from unsorted house-refuse by disintegrating it, mixing it with a powdered agglutinant (preferably one which acts also as a disinfectant and deodorizer such as dry pitch), heating to melt the agglutinant, and pressing while hot. A silicate, ground flints or granite, cement, slag, or a like hardening-substance may be added when making paving-blocks, which may be used for roads,

pavements, floors, and the like. According to the Provisional Specification, chloride of lime may be added to the mixture as a disinfectant.

27,688. Wallace, R. W., and Reynaud, G. Dec. 20, 1907, [date applied for under Section 91 of Patents &c. Act, 1907]. No Patent granted (Sealing fee not paid).

Resinous and oily plastic compositions.—Elastic or plastic products similar to caoutchouc, gutta-percha, or mastic are prepared by adding gum-resins, extracted from the Xanthorrhoeas (Blackboys, Grass trees, &c.) or from trees yielding similar resins, to a bath of vegetable oil heated to a temperature above 200° C. The resins are obtained by crushing and washing the bark and lamellae of the trees, dissolving in boiling alcohol, filtering, and evaporating. In order to obtain a product similar to caoutchouc, the oil is previously heated to about 300° C. and equal parts of linseed oil and gum-resin are preferably employed. For a gutta-percha-like product, a temperature of 250° C. may be employed and for a viscous material 220° C.

LONDON:
PRINTED FOR HIS MAJESTY'S STATIONERY OFFICE,
By DARLING & SON, LTD., 34-40, BACON STREET, E.
PUBLISHED AT THE PATENT OFFICE, 25, SOUTHAMPTON BUILDINGS,
CHANCERY LANE, LONDON, W.C.

1911.

PATENT OFFICE PUBLICATIONS.

ACTS AND RULES.

Patents and Designs Act, 1907. 5½d., by post 7d.
Patents and Designs Act, 1908. ½d., by post 1d.
Trade Marks Act, 1905. 3d., by post 4d.
Patents Rules, 1908. 5d., by post 6d.
Designs Rules, 1908. 4d., by post 5d.
Designs Rules, 1908 (second set). 1d., by post 1½d.
Trade Marks Rules, 1906. 5d., by post 6½d.
Register of Patent Agents' Rules, 1908. 1d., by post 1½d.

JOURNALS.

ILLUSTRATED OFFICIAL JOURNAL (PATENTS). Published every Wednesday. 6d., by post 8d. Annual Subscription, including postage, 1l. 15s.; Quarterly Subscription, 8s. 9d. **CONTENTS:**—Official Notices—Applications for Patents—Acceptances of Specifications—Amendments of Specifications—Patents Sealed—Renewal Fees Paid—Patents Void—Applications Abandoned &c.—Specifications &c. Published—Designs Registered—Illustrated Abridgments of Current Specifications—and Reports of Patent &c. Cases.

TRADE MARKS JOURNAL. Published every Wednesday, 6d., by post 8d. Annual Subscription, including postage, 1l. 15s. Quarterly Subscription 8s. 9d. **CONTENTS:**—Illustrations of Trade Marks applied for, and the Names and Callings of Applicants.

1876-1887. Nos. 1 to 509. 1s. each.

1888. Nos. 510 to 561. 1s. 6d. each.

1889-1909. Nos. 562 to 1657. 6d. each, by post 8d.

Subscriptions to the above Journals will not be received for a shorter period than three months, such period to commence on either of the following dates:—

1st January,	1st July, or
1st April,	1st October.

Annual Subscriptions to date from 1st January in each year.

(186) Wt. 7883—2571. 140,000. 6/1910. L. & M. Ltd.

REPORTS of PATENT, DESIGN, and TRADE MARK CASES.

1884-1886. 6d. each number, or 10s. per yearly volume.
1887-1888. 1s. each number, or 20s. per yearly volume.
1889-1910. 6d. each number. Price of yearly volumes according to size.

DIGESTS of CASES reported in Vols. I.-V., 1s. each; Vols. VI.-XXVI., 6d. each.

CONSOLIDATED DIGEST OF CASES reported in Vols. I.-X., 5s. per copy, by post 5s. 5d.; Vols. XI.-XVI., 5s. per copy, by post 5s. 4d.; Vols. XVII.-XXII., 5s. per copy, by post 5s. 4d.

PRINTED SPECIFICATIONS OF PATENTS. 1617-1910.

Price per copy 8d., including inland postage. In ordering Specifications the Name of the Patentee, and the Number and Year of the Patent must be given. Specifications are on sale 15 days after advertisement of Acceptance of Complete Specification.

ABRIDGMENT CLASS AND INDEX KEY.

Showing ABRIDGMENT CLASSES and INDEX HEADINGS to which inventions are assigned in the Official Publications of the Patent Office. REVISED EDITION, 1910. 1s., by post 1s. 6d.

ABRIDGMENTS OF SPECIFICATIONS.

(A).—*Illustrated* volumes of Abridgments of Specifications in accordance with the classification in the ABRIDGMENT-CLASS AND INDEX KEY have been published, or are in course of publication, for nine consecutive periods, dealing completely with all specifications published from 1855 to 1908. There are 146 volumes for each of these nine periods, and the price of each volume is 1s., including inland postage.

List of Illustrated Volumes.

1. ACIDS, ALKALIES, OXIDES, AND SALTS, INORGANIC.
2. ACIDS AND SALTS, ORGANIC, AND OTHER CARBON COMPOUNDS, [including DYES].
3. ADVERTISING AND DISPLAYING.
4. AERONAUTICS.
5. AGRICULTURAL APPLIANCES, FARMYARD AND LIKE, [including the housing, feeding, and treatment of animals].
6. AGRICULTURAL APPLIANCES FOR THE TREATMENT OF LAND AND CROPS, [including Gardening-appliances].

7. AIR AND GAS ENGINES.
8. AIR AND GASES, COMPRESSING, EXHAUSTING, MOVING, AND OTHERWISE TREATING.
9. AMMUNITION, TORPEDOES, EXPLOSIVES, AND PYRO-TECHNICS.
10. ANIMAL-POWER ENGINES AND MISCELLANEOUS MOTORS.
11. ARTISTS' INSTRUMENTS AND MATERIALS.
12. BEARINGS AND LUBRICATING-APPARATUS.
13. BELLS, GONGS, FOGHORNS, SIRENS, AND WHISTLES.
14. BEVERAGES, [excepting Tea, coffee, cocoa, and like beverages].
15. BLEACHING, DYEING, AND WASHING TEXTILE MATERIALS, YARNS, FABRICS, AND THE LIKE, [excepting Dyes].
16. BOOKS, [including Cards and card cases and the like].
17. BOOTS AND SHOES.
18. BOXES AND CASES, [excepting Trunks, portmanteaus, hand and like travelling bags, baskets, hampers, and other wickerwork].
19. BRUSHING AND SWEEPING.
20. BUILDINGS AND STRUCTURES.
21. CASKS AND BARRELS.
22. CEMENTS AND LIKE COMPOSITIONS.
23. CENTRIFUGAL DRYING, SEPARATING, AND MIXING MACHINES AND APPARATUS.
24. CHAINS, CHAIN CABLES, SHACKLES, AND SWIVELS.
25. CHIMNEYS AND FLUES, [including Ventilating-shaft tops].
26. CLOSETS, URINALS, BATHS, LAVATORIES, AND LIKE SANITARY APPLIANCES.
27. COIN-FREED APPARATUS AND THE LIKE.
28. COOKING AND KITCHEN APPLIANCES, BREAD-MAKING, AND CONFECTIONERY.
29. COOLING AND ICE-MAKING, [including Refrigerators and Ice-storing].
30. CUTLERY.
31. CUTTING, PUNCHING, AND PERFORATING PAPER, LEATHER, AND FABRICS, [including the general treatment of paper after its manufacture].
32. DISTILLING, CONCENTRATING, EVAPORATING, AND CONDENSING LIQUIDS, [excepting Steam-engine condensers].
33. DRAINS AND SEWERS.
34. DRYING.
35. DYNAMO-ELECTRIC GENERATORS AND MOTORS, [including Frictional and influence machines, magnets, and the like].
36. ELECTRICITY, CONDUCTING AND INSULATING.
37. ELECTRICITY, MEASURING AND TESTING.
38. ELECTRICITY, REGULATING AND DISTRIBUTING.
39. ELECTRIC LAMPS AND FURNACES.
40. ELECTRIC TELEGRAPHS AND TELEPHONES.
41. ELECTROLYSIS, [including Electrodeposition and Electroplating].
42. FABRICS, DRESSING AND FINISHING WOVEN AND MANUFACTURING FELTED, [including Folding, Winding, Measuring, and Packing].
43. FASTENINGS, DRESS, [including Jewellery].
44. FASTENING-, LOCK, LATCH, BOLT, AND OTHER, [including Safes and strong-rooms].
45. FENCING, TRELLIS, AND WIRE NETTING.
46. FILTERING AND OTHERWISE PURIFYING LIQUIDS.
47. FIRE, EXTINCTION AND PREVENTION OF.
48. FISH AND FISHING.
49. FOOD PREPARATIONS AND FOOD-PRESERVING.
50. FUEL, MANUFACTURE OF.
51. FURNACES AND KILNS, [including Blowpipes and blowpipe burners; Smiths' forges and rivet hearths; and Smoke and fumes, Treating].
52. FURNITURE AND UPHOLSTERY.
53. GALVANIC BATTERIES.
54. GAS DISTRIBUTION.
55. GAS MANUFACTURE.
56. GLASS.
57. GOVERNORS, SPEED-REGULATING, FOR ENGINES AND MACHINERY.
58. GRAIN AND SEEDS, TREATING, [including Flour and meal].
59. GRINDING, CRUSHING, PULVERIZING, AND THE LIKE.
60. GRINDING OR ABRADING, AND BURNISHING.
61. HAND TOOLS AND BENCHES FOR THE USE OF METAL, WOOD, AND STONE WORKERS.
62. HARNESS AND SADDLERY.
63. HATS AND OTHER HEAD COVERINGS.
64. HEATING, [excepting Furnaces and kilns; and Stoves, ranges, and fireplaces].
65. HINGES, HINGE-JOINTS, AND DOOR AND GATE FURNITURE AND ACCESSORIES, [excepting Fastenings, Lock, latch, bolt, and other].
66. HOLLOW-WARE, [including Buckets, Pans, Kettles, Saucepans, and Water-cans].
67. HORSE-SHOES.
68. HYDRAULIC ENGINEERING.
69. HYDRAULIC MACHINERY AND APPARATUS, [excepting Pumps and other means for raising and forcing liquids].
70. INDIA-RUBBER AND GUTTA-PERCHA, [including Plastic compositions and Materials of constructive utility, other than metals and stone].
71. INJECTORS AND EJECTORS.
72. IRON AND STEEL MANUFACTURE.
73. LABELS, BADGES, COINS, TOKENS, AND TICKETS.
74. LACE-MAKING, KNITTING, NETTING, BRAIDING, AND PLAITING.
75. LAMPS, CANDLESTICKS, GASALIERES, AND OTHER ILLUMINATING APPARATUS, [excepting Electric lamps].
76. LEATHER, [including Treatment of hides and skins].
77. LIFE-SAVING, [MARINE], AND SWIMMING AND BATHING APPLIANCES.
78. LIFTING, HAULING, AND LOADING, [including Lowering, Winding, and Unloading].
79. LOCOMOTIVES AND MOTOR VEHICLES FOR ROAD AND RAIL, [including Portable and semi-portable engines].
80. MECHANISM AND MILL GEARING.
81. MEDICINE, SURGERY, AND DENTISTRY.
82. METALS AND ALLOYS, [excepting Iron and Steel manufacture].
83. METALS, CUTTING AND WORKING.
84. MILKING, CHURNING, AND CHEESE-MAKING.
85. MINING, QUARRYING, TUNNELLING, AND WELL-SINKING.
86. MIXING AND AGITATING MACHINES AND APPLIANCES, [excepting Centrifugal machines and apparatus].
87. MOULDING PLASTIC AND POWDERED SUBSTANCES, [including Bricks, building and paving blocks, and tiles, and Pott ry].
88. MUSIC AND MUSICAL INSTRUMENTS.
89. NAILS, RIVETS, BOLTS AND NUTS, SCREWS, AND LIKE FASTENINGS.
90. NON-METALLIC ELEMENTS.
91. OILS, FATS, LUBRICANTS, CANDLES, AND SOAPS.
92. ORDNANCE AND MACHINE GUNS.
93. ORNAMENTS.
94. PACKING AND BALING GOODS.
95. PAINTS, COLOURS, AND VARNISHES.
96. PAPER, PASTEBOARD, AND PAPIER MÂCHÉ.
97. PHILOSOPHICAL INSTRUMENTS, [including Optical, Nautical, Surveying, Mathematical, and Meteorological Instruments].
98. PHOTOGRAPHY.
99. PIPES, TUBES, AND HOSE.
100. PRINTING, LETTERPRESS AND LITHOGRAPHIC.
101. PRINTING OTHER THAN LETTERPRESS OR LITHOGRAPHIC.
102. PUMPS AND OTHER MEANS FOR RAISING AND FORCING LIQUIDS, [excepting Rotary Pumps].
103. RAILWAY AND TRAMWAY VEHICLES.
104. RAILWAYS AND TRAMWAYS.
105. RAILWAY SIGNALS AND COMMUNICATING-APPARATUS.
106. REGISTERING, INDICATING, MEASURING, AND CALCULATING, [excepting Signalling and indicating by signals].
107. ROADS AND WAYS.
108. ROAD VEHICLES.
109. ROPES AND CORDS.
110. ROTARY ENGINES, PUMPS, BLOWERS, EXHAUSTERS, AND METERS.
111. SEWAGE, TREATMENT OF, [including Manure].
112. SEWING AND EMBROIDERING.
113. SHIPS, BOATS, AND RAFTS, Div. I.
114. ————— Div. II.
115. ————— Div. III.
116. SHOP, PUBLICHOUSE, AND WAREHOUSE FITTINGS AND ACCESSORIES.
117. SIFTING AND SEPARATING.
118. SIGNALLING AND INDICATING BY SIGNALS, [excepting Railway signals and communicating-apparatus].
119. SMALL-ARMS.
120. SPINNING, [including the preparation of fibrous materials and the doubling of yarns and threads].
121. STARCH, GUM, SIZE, GLUE, AND OTHER STIFFENING AND ADHESIVE MATERIALS.
122. STEAM ENGINES, [including Details common to fluid-pressure engines generally].
123. STEAM GENERATORS, [excepting Furnaces].
124. STONE, MARBLE, AND THE LIKE, CUTTING AND WORKING.
125. STOPPERING AND BOTTLING, [including Bottles, jars, and like vessels].
126. STOVES, RANGES, AND FIREPLACES.
127. SUGAR.
128. TABLE ARTICLES AND APPLIANCES.
129. TEA, COFFEE, COCOA, AND LIKE BEVERAGES.
130. TOBACCO.
131. TOILET AND HAIRDRESSING ARTICLES, AND PERFUMERY.
132. TOYS, GAMES, AND EXERCISES.
133. TRUNKS, PORTMANTEAUS, HAND AND LIKE TRAVELLING BAGS, BASKETS, HAMPERS, AND OTHER WICKER-WORK.
134. UMBRELLAS, PARASOLS, AND WALKING-STICKS.
135. VALVES AND COCKS.

136. VELOCIPEDES.
 137. VENTILATION.
 138. WASHING AND CLEANING CLOTHES, DOMESTIC ARTICLES, AND BUILDINGS.
 139. WATCHES, CLOCKS, AND OTHER TIMEKEEPERS.
 140. WATERPROOF AND SIMILAR FABRICS.
 141. WEARING-APPAREL.
 142. WEAVING AND WOVEN FABRICS.
 143. WEIGHING-APPARATUS.
 144. WHEELS FOR VEHICLES, [excepting *Wheels for Locomotives and tramway and traction engines; Railway and tramway vehicles; and Toys*].
 145. WOOD AND WOOD-WORKING MACHINERY.
 146. WRITING-INSTRUMENTS AND STATIONERY AND WRITING ACCESSORIES, [including *Educational appliances*].

LIST OF PERIODS.

1855-1866.
 1867-1876.
 1877-1883.
 1884-1888.
 1889-1892.
 1893-1896.
 1897-1900.
 1901-1904.
 1905-1908. (*In course of publication.*)

Volumes in course of publication can be obtained sheet by sheet, as printed, by payment in advance of a subscription of 2s. for each volume including inland postage. The sheets already printed can be seen in the Patent Office Library and in some of the principal provincial Libraries.

1909-1915. (*In preparation.*)

For this period there will be 271 volumes, a full list of which appears in Part I. of the Abridgment Class and Index Key.

(B).—Unillustrated volumes of Abridgments of Specifications from 1617 to 1866. For the period before 1855, reference may be made to the unillustrated series of abridgments, but it must be borne in mind that this series is not in accordance with the above classification and does not deal completely with all the published specifications belonging to that period. The price of each volume in this series is 2s., including inland postage.

List of Unillustrated Volumes.

(The numbers within brackets following the titles are the serial numbers of the volumes).

- ACIDS, ALKALIES, OXIDES, AND SALTS. (40.) 1622-1866.
 AERONAUTICS. (41.) 1815-1866.
 AGRICULTURE:—
 —Div. I.—FIELD IMPLEMENTS. (81.) 1618-1866.
 —Div. II.—BARN AND FARMYARD IMPLEMENTS, [including the cleansing, drying, and storing of grain]. (82.) 1636-1866.
 —Div. III.—AGRICULTURAL AND TRACTION ENGINES. (83.) 1618-1866.
 AIDS TO LOCOMOTION. (7.) 1691-1866.
 AIR, GAS, AND OTHER MOTIVE-POWER ENGINES. (62.) 1633-1866 (*out of print*).
 ANCHORS. (69.) 1796-1866.
 ARTIFICIAL LEATHER, FLOORCLOTH, OILCLOTH, OIL-SKIN, AND OTHER WATERPROOF FABRICS. (80.) 1627-1866.
 ARTISTS' INSTRUMENTS AND MATERIALS. (54.) 1618-1866.
 BLEACHING, DYEING, AND PRINTING CALICO AND OTHER FABRICS AND YARNS. (14.) 1617-1857.
 BOOKS, PORTFOLIOS, CARD-CASES, &c. (43.) 1768-1866.
 BREWING, WINE-MAKING, AND DISTILLING ALCOHOLIC LIQUIDS. (93.) 1634-1866.

- BRICKS AND TILES. (22.) 1619-1860.
 BRIDGES, VIADUCTS, AND AQUEDUCTS. (36.) 1750-1866.
 BRUSHING AND SWEEPING. (57.) 1699-1866.
 CARRIAGES AND OTHER VEHICLES FOR COMMON ROADS. (98.) 1625-1866.
 CARRIAGES AND OTHER VEHICLES FOR RAILWAYS. (46.) 1807-1866.
 CASKS AND BARRELS. (71.) 1797-1866.
 CHAINS, CHAIN CABLES, &c. (90.) 1634-1866.
 COOKING, BREAD-MAKING, AND CONFECTIONERY. (61.) 1634-1866.
 CUTTING, FOLDING, AND ORNAMENTING PAPER. (12.) 1636-1866.
 DRAINS AND SEWERS. (1.) 1619-1866.
 DRESSING AND FINISHING WOVEN FABRICS, AND MANUFACTURING FELTED FABRICS. (91.) 1620-1866.
 ELECTRICITY AND MAGNETISM, THEIR GENERATION AND APPLICATIONS. (15.) 1766-1857.
 ELECTRICITY AND MAGNETISM:—
 —Div. IV.—ELECTRIC LIGHTING, IGNITING, AND HEATING. (95.) 1839-1876.
 —Div. V.—ELECTRODEPOSITION AND ELECTROLYSIS. (96.) 1805-1876.
 —Div. VI.—ELECTRIC MOTIVE-POWER ENGINES AND SIMILAR APPARATUS. (97.) 1837-1876.
 FARRIERY. (53.) 1719-1866.
 FIRE-ARMS AND OTHER WEAPONS, AMMUNITION, AND ACCOUTREMENTS. (10.) 1538-1858.
 FIRE ENGINES, EXTINGUISHERS, ESCAPES, ALARMS, &c. (83.) 1625-1866.
 FURNITURE AND UPHOLSTERY. (39.) 1620-1866.
 GRINDING GRAIN, AND DRESSING FLOUR AND MEAL. (73.) 1623-1866.
 HARBOURS, DOCKS, CANALS, &c. (77.) 1617-1866.
 HINGES, HINGE-JOINTS, AND DOOR SPRINGS. (59.) 1775-1866.
 HYDRAULICS. (32.) 1617-1866.
 ICE-MAKING MACHINES, ICE SAFES, AND ICE HOUSES. (85.) 1819-1866.
 LACE-MAKING, KNITTING, NETTING, BRAIDING, AND PLAITING. (29.) 1675-1866.
 LAMPS, CANDLESTICKS, CHANDELIERS, AND OTHER ILLUMINATING APPARATUS. (41.) 1637-1866.
 LETTERPRESS AND SIMILAR PRINTING. (13.) 1617-1857.
 LOCKS, LATCHES, BOLTS, AND SIMILAR FASTENINGS. (60.) 1774-1866.
 MANUFACTURE OF IRON AND STEEL. (6.) 1620-1866.
 MANUFACTURE OF PAPER, PASTEBOARD, AND PAPIER MACHÉ. (11.) 1695-1857.
 MANURE. (3.) 1721-1855.
 MARINE PROPULSION, [excluding *Sails*]. (5.) 1618-1857.
 MASTS, SAILS, RIGGING, &c. (73.) 1625-1866.
 MEDICINE, SURGERY, AND DENTISTRY. (25.) 1620-1866.
 METALLIC PIPES AND TUBES. (70.) 1741-1866.
 METALS AND ALLOYS, [excepting *Iron and Steel*]. (18.) 1623-1859.
 MILKING, CHURNING, AND CHEESE-MAKING. (72.) 1777-1866.
 MINING, QUARRYING, TUNNELLING, AND WELL-SINKING. (71.) 1618-1866.
 MUSIC AND MUSICAL INSTRUMENTS. (26.) 1691-1866.
 NAILS, RIVETS, BOLTS, SCREWS, NUTS, AND WASHERS. (53.) 1618-1866.
 NEEDLES AND PINS. (45.) 1755-1866.
 OILS, FATS, LUBRICANTS, CANDLES, AND SOAPS. (27.) 1617-1866.
 OPTICAL, MATHEMATICAL, AND OTHER PHILOSOPHICAL INSTRUMENTS. (78.) 1636-1866.
 PAINTS, COLOURS, AND VARNISHES. (50.) 1618-1866.
 PHOTOGRAPHY. (19.) 1839-1859.
 PLATING OR COATING METALS WITH METALS. (23.) 1637-1860.
 POTTERY. (24.) 1626-1861.
 PREPARATION AND COMBUSTION OF FUEL. (30.) 1620-1865 (*out of print*).
 PREPARATION AND USE OF TOBACCO. (42.) 1721-1866.
 PREPARATION OF INDIA-RUBBER AND GUTTA-PERCHA. (16.) 1791-1866.
 PREPARING AND CUTTING CORK, BOTTLING LIQUIDS, &c. (56.) 1777-1866.
 PRESERVATION OF FOOD. (4.) 1691-1855.
 PRODUCTION AND APPLICATIONS OF GAS. (17.) 1681-1853.
 PURIFYING AND FILTERING WATER. (79.) 1675-1866.
 RAILWAYS. (33.) 1803-1866.
 RAILWAY SIGNALS AND COMMUNICATING APPARATUS. (38.) 1840-1866 (*out of print*).
 RAISING, LOWERING, AND WEIGHING. (31.) 1617-1866.
 ROADS AND WAYS. (35.) 1619-1866.
 SADDLERY, HARNESS, STABLE FITTINGS, &c. (34.) 1625-1866.
 SAFES, STRONG ROOMS, TILLS, &c. (64.) 1801-1866.
 SEWING AND EMBROIDERING. (2.) 1755-1866.
 SHIP BUILDING, REPAIRING, SHEATHING, LAUNCHING, &c. (21.) 1618-1866.
 SKINS, HIDES, AND LEATHER. (55.) 1627-1866.
 SPINNING. (23.) 1624-1863 (*out of print*).
 STARCH, GUM, SIZE, GLUE, &c. (100.) 1717-1876.
 STEAM CULTURE. (8.) 1618-1856. *See also AGRICULTURE*
 Divs. I. and III.

STEAM ENGINES. (49.) 1618-1859 (In 2 vols.).
 STEERING AND MANŒUVRING VESSELS. (75.) 1763-1866.
 SUGAR. (48.) 1663-1866.
 TEA, COFFEE, CHICORY, CHOCOLATE, COCOA, &c. (87.)
 1704-1866.
 TOYS, GAMES, AND EXERCISES. (51.) 1672-1866.
 TRUNKS, PORTMANTEAUS, BOXES, AND BAGS. (84.)
 1635-1866.
 UMBRELLAS, PARASOLS, AND WALKING-STICKS. (47.)
 1786-1866.
 UNFERMENTED BEVERAGES, AERATED LIQUIDS, MINERAL
 WATERS, &c. (86.) 1774-1866.
 VENTILATION. (52.) 1632-1866.
 WASHING AND WRINGING MACHINES. (89.) 1691-1866.
 WATCHES, CLOCKS, AND OTHER TIMEKEEPERS. (9.)
 1661-1856.
 WATER CLOSETS, EARTH CLOSETS, URINALS, &c. (63.)
 1775-1866.
 WEARING-APPAREL.—DIV. I.—HEAD COVERINGS. (65.)
 1637-1866.
 ——— DIV. II.—BODY COVERINGS. (66.) 1671-1866.
 ——— DIV. III.—FOOT COVERINGS. (67.) 1693-1866.
 ——— DIV. IV.—DRESS FASTENINGS AND JEWELLERY.
 (68.) 1631-1866.
 WEAVING. (20.) 1620-1859.
 WRITING INSTRUMENTS AND MATERIALS. (37.) 1635-1866.

INDEXES.

1617-1852.

NAME INDEX. 5s., by post 5s. 6d.

SUBJECT-MATTER INDEX. 2 vols. 10s., by post 10s. 10d.

1852-1883.

NAME INDEX.

1852-1856, 1864-1870. 2s. 6d. each yearly volume, by post
 2s. 10d.

187-1873. 2s. each yearly volume, by post 2s. 3d.

1857-1863, 1874-1883. *Out of print.*

SUBJECT-MATTER INDEX.

1852-1855. 5s. each yearly volume, by post 5s. 4d.

1856-1883. *Out of print.*

1884 and subsequent years.

NAME INDEX.

1884. *Out of print.*

1885-1888. 2s. each yearly volume, by post 2s. 4d. 1887.
Out of print.

1859-1904. *See* Illustrated Official Journals, Nos. 52, 108,
 160, 212, 165, 317, 370, 423, 475, 527, 579, 631, 683, 735, 780,
 838, 891, 913, 965, 1016, and 1099, 6d. each, by post 8d.
 Journals Nos. 108, 160, 212, and 423, *out of print.*

NUMBER INDEX OF PROCEEDINGS ADVERTISED
 ON COMPLETE SPECIFICATIONS AND PATENTS.
 1901-1909. *See* Illustrated Official Journals Nos. 687, 739,
 790, 842, 894, 946, 998, 1050, and 1103, 6d. each, by post 8d.

SUBJECT-MATTER INDEX OF ACCEPTED COM-
 PLETE SPECIFICATIONS DATED IN THE YEARS
 NAMED.

1881. 7s., by post 7s. 5d.

1885-1886. *Out of print.*

1887-1890. 3s. 4d. each yearly volume, by post 3s. 8d.

1891-1903. 2s. each yearly volume, by post 2s. 4d.

MONTHLY SUBJECT-MATTER INDEX OF AC-
 CEPTED COMPLETE SPECIFICATIONS.
 Consolidated in March, June, September, and Decem-
 ber, 1s. each part. Annual Subscription 5s., by post
 7s. 6d.

PATENT OFFICE LIBRARY.

CATALOGUE.

Authors. 1898. 1l. 6s. 0d.; by post, 1l. 6s. 8d.

—Supplement 1-2 (1898-1909).

Subjects. 1883. 15s. 8d.; by post, 16s. 2d.

(*New edition in preparation. MS. may be consulted in
 Library.*)

GUIDES.

6d. each, including inland postage.

1. Key to the classifications of the Patent Specifi-
 cations of France, Germany, Austria, Nor-
 way, Denmark, Sweden, and Switzerland.
(Second Edition.)
2. Fine and Graphic Arts (including Photo-
 graphy) and Art Industries. Subject List.
(Second Edition.)
4. Guide to the Search Department of the Patent
 Office Library. *(Third Edition.)*
5. Key to the German Patent Classification, 1900.
*(For revised Classification, dated 1901, see
 No. 1 above.)*
6. Chemistry and Chemical Technology. Subject
 List.
7. Chemical Industries; including Destructive
 Distillation, Mineral Oils and Waxes, Gas-
 lighting, Acetylene; Oils, Fats, Soaps,
 Candles, and Perfumery; Paints, Varnishes,
 Gums, Resins; Paper and Leather Indus-
 tries. Subject List.
8. Class List and Index of the Periodical Publi-
 cations in the Patent Office Library. *(Second
 Edition.)*
9. Domestic Economy, Foods, and Beverages; in-
 cluding the Culture of Cacao, Coffee, Barley,
 Hops, Sugar, Tea, and the Grape. Subject
 List.
10. Textile Industries and Wearing-apparel; in-
 cluding the Culture and Technology of Tex-
 tile Fibres. Subject List.
11. General Science Physics, Sound, Music, Light,
 Microscopy, and Philosophical Instruments.
 Subject List.
12. Architecture and Building Construction.
 Subject List.
13. Mineral Industries and Allied Sciences. Sub-
 ject List.
14. Electricity, Magnetism, and Electro-Technics.
 Subject List.
15. Agriculture, Rural Economy, and Allied
 Sciences. Subject List.
16. Heat and Heat Engines, (excluding Marine
 Engineering). Subject List.
17. Aerial Navigation and Meteorology. Subject
 List.
18. Military and Naval Arts; including Marine
 Engineering. Subject List.

NEW SERIES.

AA-BE.—Reference works (Biography; Bibliog-
 raphy; Topography, etc.). Subject List.
 BF-BL.—Patent and Copyright Laws. Subject
 List.

Others in preparation.

NOTICE.—The above publications are sold at the PATENT OFFICE, 25, Southampton Buildings, Chancery Lane, W.C., and will be forwarded by post on receipt of the price and of the postage (if any is charged). All Subscriptions must be paid in advance. Sums amounting to 6d. or more must be remitted by Postal or Post Office Order, payable to the COMPTROLLER-GENERAL, at the above address. Postage stamps sent in payment of any amount exceeding 5d. will be returned. Deposit accounts may be opened, the minimum deposit being £2.